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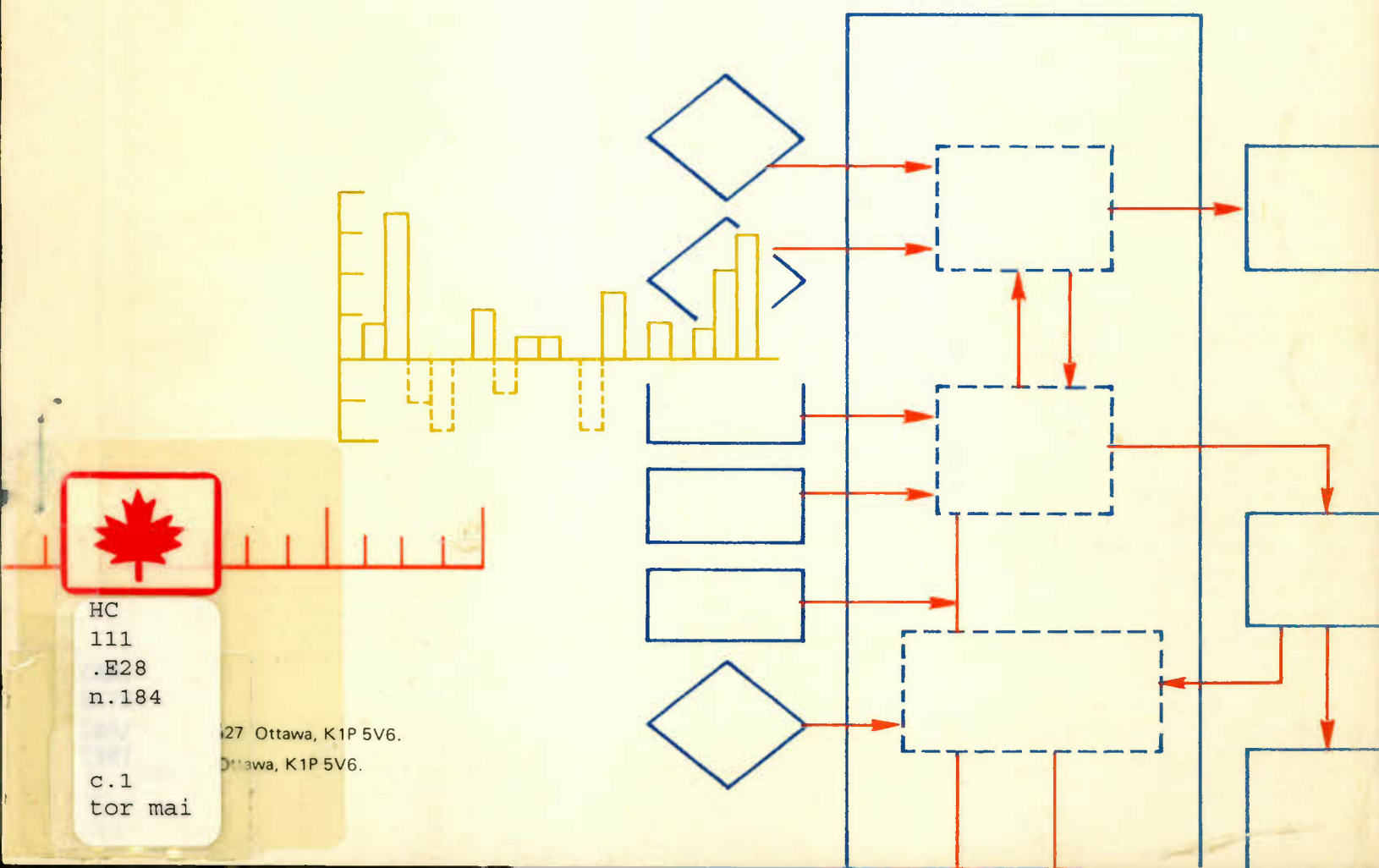

DISCUSSION PAPER NO. 184

Inflation and Unemployment in Canada and Other Industrial Countries

by

Anne Romanis Braun

prepared for

The Centre for the Study of Inflation and Productivity

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ERRATUM TO DISCUSSION PAPER No. 184 -- Chart VI

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Pages 32-33: Chart VI

NOTE:

An amended version of this chart eliminating the references to the "Norm" should have been included instead of the present version. If the reference to "Norm" is deleted, in the chart as drawn, the percentage DCE and DCE + NFA is equivalent to that shown in the scale plus 8, for all countries other than Japan. For Japan, the figures for DCE and DCE + NFA are as follows:

	DCE	DCE + NFA
1962	17.3	18.1
1963	23.2	23.4
1964	-2.4	-3.4
1965	14.9	15.5
1966	15.5	15.9
1967	14.8	14.2
1968	13.5	14.5
1969	16.7	18.4
1970	16.8	17.8
1971	21.1	24.5
1972	22.9	24.7
1973	16.6	13.5
1974	12.4	10.5
1975	11.6	10.9
1976	10.4	10.9
1977	8.3	9.7

Inflation and Unemployment in Canada and Other Industrial Countries

by Anne Romanis Braun

Centre for the Study of Inflation and Productivity *

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Résumé

Le présent document analyse l'évolution des politiques de régulation de la demande entre 1962 et 1978, telle qu'elle se manifeste dans l'accroissement de la masse monétaire au sens large et dans la hausse des revenus nominaux et réels et des niveaux des prix, pour neuf grands pays industriels, y compris le Canada. L'auteur vise à établir une distinction entre les dimensions intérieure et internationale du problème de l'inflation, à en identifier les principales causes et à indiquer par quels moyens on aurait pu par le passé et on pourrait à l'heure actuelle en arriver à des résultats plus satisfaisants. Elle présente une vue générale de ces tendances dans l'ensemble des neufs pays considérés, puis compare la situation des États-Unis à celle des huit autres nations et, enfin, analyse les traits dominants de cas particuliers. Le document traite aussi du problème du chômage et de l'inflation au Canada au cours des années 70, ainsi que du programme de lutte contre l'inflation qui a été mis en vigueur de 1975 à 1978.

Dans la première partie, l'auteur étudie l'expérience des neufs pays considérés dans leur ensemble. Elle décrit l'influence que la transformation du système des paiements internationaux a eue sur la régulation de la demande au cours des trois périodes qu'elle établit dans son analyse, soit les années antérieures à 1971 où les taux de change étaient fixes, la période commençant au milieu de 1973, marquée par des taux de change très flexibles et enfin, l'intervalle, durant lequel certains pays ont tenté d'empêcher leur monnaie de s'apprécier, alors que d'autres étaient disposés à la laisser se déprécier.

Lorsque les taux de change étaient fixes, les économies industrielles formaient un système quasi fermé, où chaque pays disposait d'une marge de manoeuvre assez étroite par rapport aux autres tant qu'on ne permettait pas aux changes de fluctuer et tant que la régulation de la demande était déterminée par les politiques intérieures de chacun et par celles des autres pays.

En régime de taux de change parfaitement flexibles, au contraire, les fluctuations des devises refléteraient l'action de politiques divergentes, car les autorités de chaque pays auraient un contrôle effectif sur l'expansion de la demande nominale. Plus les écarts entre les politiques de chacun seraient profonds, plus les résultats de celles-ci -- des points de vue de la croissance réelle de la production, de l'inflation des prix, des niveaux d'activité dans les secteurs d'exportation et de substitution aux importations, et des niveaux de l'investissement réel, etc. -- seraient susceptibles d'être influencés par les variations des taux de change réels, c'est-à-dire, par des fluctuations qui ne correspondraient pas à celles qu'imposerait la nécessité de combattre différents taux d'inflation. C'est pourquoi, même en régime de taux de change parfaitement

flexibles, les effets des politiques nationales sur les prix et la production réelle seraient influencés par les politiques poursuivies par d'autres pays; la nécessité de coordonner les politiques, ou du moins de les harmoniser, existerait donc toujours.

La partie I.2 montre que le taux de croissance des dépenses des neuf pays (c'est-à-dire, de leur PNB nominal global), au cours d'une année donnée, par rapport à l'année précédente, reflète la politique adoptée antérieurement, telle qu'elle se manifeste dans le taux d'expansion de la masse monétaire au sens large au cours de l'année précédente; par ailleurs, le taux d'accroissement des prix (mesuré d'après les indices de prix du PNB) reflète celui des dépenses mais avec un retard d'un an.

Cette réactivité déphasée suppose que, si la demande est réduite dans les neuf pays après avoir connu une expansion accélérée, la politique d'austérité sera appliquée alors même que les prix et les salaires s'élèveront à un rythme accentué, ce qui se traduira par un ralentissement marqué de la production réelle et de l'emploi. Cette séquence de deux récessions prononcées explique la disparition, au cours des années 70, de la relation d'arbitrage exprimée par la courbe de Phillips entre le niveau de chômage et le taux d'inflation -- phénomène qui a été abondamment analysé.

La partie I.3 analyse l'opposition entre "monétaristes" et "keynésiens" quant au rôle de la masse monétaire à l'égard des fluctuations des niveaux des dépenses et des prix nominaux. L'auteur estime que la relation observée entre l'expansion de la monnaie et les variations ultérieures des dépenses ne correspond pas à un simple rapport de cause à effet, mais qu'elle reflète plutôt une influence commune qui s'exerce par le truchement des variations des taux d'intérêt réels, lesquelles traduisent l'effet combiné de toute une gamme de politiques, d'influences externes et de facteurs d'offre.

Pour comprendre les raisons de cette aggravation si dramatique de l'inflation en 1974, il faut connaître les raisons qui avaient poussé les pays industriels à adopter une politique aussi expansionniste au cours de l'année 1972. Dans la deuxième partie, l'auteur souligne le rôle joué à cet égard par leur incapacité de se plier aux contraintes imposées par le système des paiements à la fin des années 60 et, surtout, entre 1971 et 1973.

Les efforts mis en oeuvre à la fin des années 60 pour réaliser des objectifs nationaux divergents ont contribué à la débandade des taux de change, mais il avait aussi fallu que les politiques inflationnistes des États-Unis provoquent une expansion rapide des secteurs "ouverts" des autres pays industriels en 1968-1969, ce qui, grâce aussi aux tensions

politiques qui existaient alors, avait déclenché une série de flambées salariales et une intensification des pressions exercées sur les coûts. L'inflation très rapide de 1974 était principalement attribuable à la hausse excessive des dépenses nominales qui s'était produite l'année précédente, sous l'effet conjugué de la politique monétaire fortement expansionniste des États-Unis et du Royaume-Uni en 1972 et des efforts des autres principaux pays industriels en vue d'empêcher une nouvelle appréciation de leurs devises. Aux États-Unis, le maintien des taux d'intérêt nominaux à un niveau relativement faible menait directement à une expansion accélérée du crédit dans les autres pays, où le taux de croissance rapide des coûts avoisinait ou dépassait les taux d'intérêt nominaux sur les marchés internationaux de capitaux, donnant ainsi lieu à des rendements réels très faibles ou négatifs. Les fortes entrées de capitaux qui suivirent étaient aiguillonnées par la possibilité grandissante d'une dépréciation du dollar américain. Autre facteur important, la progressivité des impôts transférait des ressources réelles vers le secteur public, alors même que les revenus nominaux s'accroissaient rapidement et que de fortes pressions politiques s'exerçaient sur les gouvernements pour rétablir le plein emploi et améliorer les conditions sociales.

La poursuite d'objectifs divergents sans ajustement des taux de change entrava les tentatives d'expansion ou de restriction et se traduisit par une discordance extraordinaire des politiques en 1973, alors que l'Allemagne et le Japon freinaient leur économie, tandis que l'Amérique du Nord, le Royaume-Uni et l'Italie continuaient d'appliquer des politiques très expansionnistes. La déroute des taux de change qui en est résultée renforça les effets inflationnistes ou déflationnistes de ces politiques et prépara les pays industriels à accepter des taux d'inflation très différents au cours des années qui suivirent. La chute du dollar américain contribua à précipiter la forte hausse des prix du pétrole.

Si l'on avait permis aux taux de s'ajuster plus tôt, on aurait pu éviter les mesures d'urgence et les politiques excessivement contraignantes. L'auteur croit que les politiques adoptées au cours de la seconde moitié des années 70 auraient pu avoir des résultats plus positifs si les trois grands pays industriels n'avaient pas tenté de contrer les effets retardés de l'expansion excessive de 1972 et l'augmentation des prix du pétrole par une restriction aussi rigoureuse du crédit en 1974. Dans le cas des États-Unis, ceci aurait pu atténuer des pressions qui ont éventuellement mené à un assouplissement excessif des conditions monétaires. En ce qui concerne l'Allemagne, il aurait peut-être été possible de maintenir la croissance réelle de la production en Europe occidentale en 1975 sans que ne s'aggrave le taux moyen de l'inflation.

L'analyse du chômage et de l'inflation au Canada dans la troisième partie du document met l'accent sur l'importance des

facteurs démographiques dans le relèvement de la croissance autonome de l'offre potentielle de main-d'oeuvre au cours des années 70. Les facteurs démographiques ont contribué à accroître le chômage structurel et frictionnel, notamment en réduisant la mobilité d'une population active renfermant une proportion de plus en plus élevée de travailleurs secondaires par ménage. Cette évolution a créé des conditions qui ont tout particulièrement favorisé la hausse du chômage, car les prestations d'assurance-chômage, plus généreuses qu'auparavant, ont encouragé les nouveaux venus sur le marché du travail à y rester malgré les difficultés qu'ils éprouvaient à trouver un emploi permanent. L'auteur maintient toutefois qu'on ne saurait interpréter la transformation du rapport chômage/postes vacants simplement comme le signe d'une évolution du fonctionnement du marché du travail qui serait attribuable à celle de la composition de la population active ou du comportement des demandeurs d'emploi. Il faut s'attendre que ce rapport évolue avec la croissance autonome de l'offre de main-d'oeuvre parce que, pour des raisons analysées dans le texte, le marché du travail ne réagit pas symétriquement à un accroissement de la demande par rapport à l'offre ou de l'offre par rapport à la demande. C'est pourquoi, lorsque la croissance autonome de l'offre de main-d'oeuvre s'accélère, l'indice des postes vacants, (ou le taux de chômage des hommes adultes, qui sont en majeure partie des membres établis de la population active) représente mieux les fluctuations salariales que ne le fait le taux général de chômage. Dans les équations sur les salaires, cette variable donne un meilleur résultat que le chômage, précisément parce qu'elle ne mesure pas "la demande excédentaire de main-d'oeuvre", telle que définie dans l'interprétation classique de la courbe de Phillips donnée par Lipsey.

La quatrième partie du document présente une analyse critique du programme de lutte contre l'inflation mis en oeuvre au Canada de 1975 à 1978. Répondant à une crise, ce programme visait à empêcher l'explosion des salaires et à ralentir l'accélération de l'inflation; il a effectivement rempli cet objectif. Compte tenu de la portée limitée des contrôles, l'objectif visé quant à la réduction des augmentations salariales au cours de la première année du programme était cependant trop optimiste; comme les autorités monétaires avaient en outre prédéterminé un taux de croissance qui serait compatible avec cet objectif et qu'on ne put rétablir l'équilibre financier dans le secteur public, les taux d'intérêt se mirent à croître, il se produisit de fortes entrées de capitaux et le taux de change se releva. En fait, la Banque du Canada put réaliser son objectif en matière de prix grâce aux effets déflationnistes de l'appréciation du dollar, mais au détriment d'un affaiblissement de l'investissement privé, surtout dans les secteurs d'exportation et de substitution aux importations. Bien que l'augmentation plus lente des prix se soit traduite par des revendications salariales moins élevées, cette modération se dissipa vite sous l'effet de l'accélération du coût de la vie qui

suivit l'abaissement de la valeur du dollar canadien à un niveau plus conforme aux coûts relatifs et l'augmentation des prix des aliments par suite d'une dégradation des conditions de l'offre.

Dans ses conclusions, l'auteur estime que c'est l'absence de politiques appropriées de régulation de la demande, plutôt que les chocs externes, qui est d'abord à l'origine de la crise inflationniste du milieu des années 70 et de la piètre conjoncture de la fin des années 70, du point de vue du contrôle de l'inflation autant que de la croissance économique. Dans une perspective à moyen terme, les prix relatifs ne sont pas aussi flexibles que le supposent les monétaristes, et un accroissement marqué des revenus nominaux de certains groupes de travailleurs crée des pressions en faveur d'une hausse des salaires dans d'autres secteurs. Pour être efficace, la régulation de la demande doit donc s'intéresser aux agrégats monétaires et budgétaires et à l'évolution conjoncturelle elle-même, surtout aux aspects de cette dernière qui influent sur l'offre des produits essentiels et sur les négociations salariales. Comme il faut un certain temps avant que les politiques ne produisent leurs effets, et comme toute modification majeure risque d'avoir des répercussions disproportionnées et perturbatrices dans des secteurs particuliers, il est préférable d'opter pour un changement graduel. La leçon que les décisionnaires peuvent tirer du présent document, c'est qu'il est nécessaire d'adopter un ensemble cohérent de politiques au fil des années, tant au sein d'une économie donnée que dans l'ensemble d'un groupe étroitement intégré de pays industriels, et de rendre ces politiques intelligibles au public si l'on veut qu'elles soient couronnées de succès.

Summary

This study reviews changes in the stance of demand policies, as indicated by the increase of the broad money supply, in nominal and real incomes and in price levels for a group of nine major industrial countries, including Canada, during 1962-78. It seeks to distinguish between national and international aspects of the inflation problem, identify significant causal elements, and suggest policy alternatives that might have been or could now be applied in order to achieve a more satisfactory outcome. The report provides a broad overview of these trends in the nine countries as a whole, contrasts the experience of the United States versus the other eight nations, and discusses key developments in particular countries. In addition, separate sections consider the problem of unemployment and inflation in Canada during the 1970's and this country's anti-inflation program of 1975-78.

Section I considers the experience of the nine countries as a group. It outlines the influence of the changing international payments system on the problem of demand management, distinguishing the periods of fixed exchange rates up to 1971, of considerable exchange rate flexibility since mid 1973, and the interegnum between, during which some countries sought to prevent their currencies appreciating while others were prepared to let their exchange rates depreciate.

Under fixed exchange rates, the industrial countries approximated to a closed economy; the power of any national authority to maintain a divergent policy stance was limited so long as the exchange rate was not allowed to change and the realized policy stance in each country was the outcome of domestic policies and of the other countries' policies.

Under perfectly flexible exchange rates, divergent policies would be reflected in exchange rate changes. The national authorities would have effective control over the expansion in nominal demand within the economy. The wider the divergence of national policies, the more their outcome in terms of real output growth, price inflation, levels of activity in export and import competing sectors, and levels of real investment, etc.--is likely to be influenced by changes in real exchange rates. That is to say, by exchange rate movements not corresponding to those required to offset different rates of inflation. Thus, even under perfectly flexible exchange rates, the real output and price effects of national policies would be influenced by the policies pursued by other countries, and the need for coordination, or at least for careful synchronization, of policies would still exist.

Section I.2 shows that the rate of increase in expenditure (aggregate nominal GNP) within the group over the preceding year reflects the previous policy stance, as indicted by the rate of expansion of broad money supply during the preceding year, and that the rate of price increase (measured by GNP deflators) reflects the rate of increase in expenditure with a one-year lag.

These lagged responses imply that if demand in the group is cut back following a rapidly accelerating expansion, the restraint of nominal spending will coincide with an acceleration of price and wage increases, resulting in a sharp deceleration of real output and increase in unemployment. This sequence in two sharp downturns, underlies the much discussed phenomenon of the disappearance of the Phillips curve "trade-off" between the level of unemployment and the rate of inflation in the 1970's.

Section I.3 discusses the "monetarist" and "Keynesian" controversy concerning the role of the quantity of money in determining changes in nominal spending and prices. It suggests that the observed relation between the

expansion of money and the subsequent change in expenditure is not a simple case of cause and effect, but rather one of joint determination via changes in real interest rates, which reflect a whole range of policy variables, external influences and supply factors.

To understand why such a drastic worsening of inflation occurred in 1974, one must know why such an expansionary policy stance was adopted in the industrial countries during 1972. Section II emphasizes the importance of the failure to satisfy the constraints imposed by the payments system during the late sixties and especially during 1971-73, as a major factor in fostering an uncontrolled acceleration of inflation.

Efforts to achieve discordant national objectives in the late sixties precipitated exchange rate changes, but not before the effect of inflationary U.S. policies had spilled over to cause a boom in the "open" sectors of other industrial countries in 1968-69, which combined with political tensions, to spark a series of wage explosions and intensification of cost pressures. The experience of very rapid inflation in 1974 was in the main the consequence of the excessive rise in nominal expenditure in 1973, generated by the combination, during 1972, of highly expansionary monetary policy in the United States and the United Kingdom with efforts by other major countries to prevent a further appreciation of their exchange rates. The policy of holding down nominal interest rates in the United States led directly to accelerating credit expansion in other countries, where persisting rapid rates of cost inflation approached or exceeded nominal interest rates in international capital markets, implying very low or negative real interest rates. Resulting heavy capital inflows were augmented by growing expectation of a depreciation of the U.S. dollar. A second major factor intensifying inflation was the effect of progressive taxes in shifting real

resources to the public sector when nominal incomes were rising fast, coming at a time when governments were under strong political pressure to restore full employment and improve social benefits.

Efforts to achieve conflicting objectives, again without allowing exchange rates to adjust, frustrated countries' efforts at expansion or restraint after 1971, and culminated in extraordinarily discordant policies in 1973, when Germany and Japan slammed on the brakes while highly expansionary policies continued in North America, the United Kingdom and Italy. The resulting large movements in exchange rates reinforced the inflationary or deflationary impact of countries' policies, and predisposed industrial countries to widely divergent inflation rates over the next several years. The fall in the U.S. dollar helped to precipitate the huge increase in oil prices.

Had exchange rates been permitted to adjust earlier, the need for crisis measures and disruptive policies might have been avoided. As it was, the outcome of policies in the second half of the seventies might have been more favorable, it is suggested, if the three largest countries had not reacted to the lagged consequences of excessive expansion in 1972, and to the oil price increase, with such a drastic restriction of credit in 1974. In the case of the United States this might have lessened the pressure for a subsequent undue easing of monetary conditions; in the German case, it might have enabled real output growth to be better maintained in Western Europe in 1975, without a worsening the average rate of inflation.

The discussion of unemployment and inflation in Canada in Section III focusses on the importance of demographic factors in raising the autonomous growth of the potential labour supply in the seventies. Demographic factors tended to increase structural-frictional unemployment, notably by

reducing the mobility of a labour force comprising an increasing proportion of secondary wage earners per household. This created a context in which generous unemployment benefits would have a particularly marked effect in raising unemployment, by encouraging recent entrants to remain in the labour force despite the difficulty of finding permanent employment. However, it is argued that the marked shift in the unemployment/vacancies relationship cannot be interpreted simply as an indication of a change in the functioning of the labour market, attributable to the changing composition of the labour force or the behaviour of those seeking work. The U/V relationship must be expected to shift with a change in the autonomous growth of labour supply because, for reasons which are discussed in the text, the labour market does not respond symmetrically to an increase in demand versus supply or to increase in supply versus demand. Hence, the working of the labour market implies that when the autonomous growth of labour supply increases, vacancies, or the unemployment rate for adult men, who are predominantly established members of the labour force, will provide a better proxy for the movement of wages than the general unemployment rate. These variables perform better than unemployment in wage equations precisely because they do not measure "excess labour demand" as defined in the conventional interpretation of the Phillips curve following Lipsey.

Section IV provides a critical assessment of Canada's Anti-Inflation Program 1975-78. The program was a crisis measure, aimed at frustrating a wage explosion and a sharp acceleration of inflation--and it fulfilled that purpose. However, an over-optimistic target for reducing wage increases in the first year of the program, given the limited coverage of controls, coupled with the enforcement of a money growth rate consistent with that target despite the failure to achieve the intended balance of public sector finances, led to rising interest rates, heavy capital inflows and an

appreciation of the exchange rate. In effect the Bank of Canada achieved the target rate of price increase through the deflationary impact of the appreciation, at the cost of weakening private investment especially in import and export competing sectors. Though the slower rise in prices was reflected in smaller wage claims, this effect was soon overtaken when the rise in cost of living accelerated after the exchange rate fell back more into line with relative costs, and food prices rose with less favorable supply conditions.

The report concludes that the lack of appropriate demand management policies, rather than external shocks, was the predominant cause of the inflationary crisis of the mid 1970's and of the unsatisfactory record of inflation and slow growth in the late 1970's. In the short to medium term, relative prices are not flexible as assumed by the monetarists, and a marked rise in money incomes of specific groups, creates pressures for other wage increases. Successful demand management therefore requires attention both to monetary and budgetary aggregates, and to developments in the real economy--especially those affecting the supply of basic commodities, and wage bargaining. Because policies take time to produce their effects, and because sharp changes in policies are liable to have disproportionate and disturbing effects in particular sectors, gradual shifts in policy are to be preferred. The lesson of this study for policy makers is the need for a consistent set of policies both within an economy, and across the closely integrated group of industrial countries; the need for a consistent sequence of policies over time; and the need to make policies intelligible to the public if they are to succeed.

Inflation and Unemployment in Canada and Other Industrial Countries

By Anne Romanis Braun

Introduction

This is a study of the experience of inflation in Canada and eight other industrial countries since the mid-1960's. It is intended to paint a broad picture of recent economic history, in order to promote discussion of key issues. 1/ It seeks to answer, or shed some light upon, such major questions as:

How far was inflation a national or an international problem?

How far was it the result of government policies, of exogenous supply shocks, or of inherent tendencies to cost pressures in market economies?

What are the principle lessons to be drawn from recent history?

How could worsening inflation and unemployment have been avoided, and how should these problems be tackled now?

How should aggregate demand policies and objectives be modified--and should they be supplemented by more specific measures such as labour market and incomes policies--in order to realize a more satisfactory outcome?

1/ The study draws on a number of recent surveys, including the report of the McCracken group of experts to the Organization for Economic Cooperation and Development, Towards Full Employment and Price Stability, Paris, June 1977; the Brookings volume on Worldwide Inflation, Krause, L. B. and Salant, W.S. (edits.) Worldwide Inflation: Theory and Recent Experience, Washington, D.C. 1977; Lord Kaldor's study of "Inflation and Recession in the World Economy," The Economic Journal, December 1976, Professor R. J. Gordon's "World Inflation and Monetary Accommodation in Eight Countries," Brookings Papers on Economic Activity, No.2 1977, and Professors Izzo and Spaventa's unpublished paper on "Macroeconomic Policies in Western Europe 1973-1977," prepared for a conference on Macroeconomic Policies for Growth and Stability held in Kiel, June 1979.

The group of nine countries covered here--Canada, France, Germany, Italy, Japan, the Netherlands, Sweden, the United Kingdom and the United States--accounts for some 85 per cent of the total output of all industrial countries. It is large enough to ensure that the movement of nominal income, real output, prices and measures of aggregate demand policies provides an adequate indication of developments in the industrial world as a whole.

I. The General Experience of Inflation in Industrial Countries 1962-78

If we wish to understand the course of output and prices in a single industrial country, it is helpful to start with a simplified picture of developments in the integrated economy of the industrial world; rather as, if one wished to study the development of real output and inflation in, say, the state of Georgia, one would need to focus first on developments in the United States. Studying the group of nine countries as a single economy is helpful as a means of securing a broad and simplified picture of what was happening at different times. But more than this, it is necessary in order to provide an adequate notion of the mechanics of inflation. In no single country--not even the United States and far less Canada--is it possible to explain the process of inflation--in terms of aggregate demand growth, nominal income, real output and price developments--without considering the effects of the international economic situation, as determined by the sum of industrial countries' policies. We shall also need to consider how the important changes in the international payments system during the last two decades affected the relation between national demand policies and actual demand conditions, real growth and inflation

within countries. Though necessarily schematic the following introductory review may provide some insights that are likely to be missed in the usual treatment of, and preoccupation with, inflation as a national phenomenon--a preoccupation that is only natural given the difficulty of assembling the evidence for the broader picture.

1. The influence of the changing international payments system

After the immense disruption of the second World War, the industrial economy of the West was gradually reintegrated during the 1950's under fixed exchange rates and through trade liberalization, the easing of restrictions on current account transactions and the lowering of tariff barriers. Although its effects were not immediately apparent, the establishment of convertibility and a high degree of freedom for capital movements in 1959 was a major step in enforcing a closer coordination of demand conditions among the industrial countries.

Before the establishment of convertibility, national authorities had considerable scope for influencing domestic demand conditions and interest rates in the absence of large capital flows. 1/ As it required time for capital markets, banking systems, and enterprises to adjust to the increased freedom of capital movements, and to set up the necessary institutions to handle such flows, the early 1960's was a period of steadily increasing interdependence of the industrial economies. By the time that the United States embarked on highly expansionary demand policies in the mid-1960's, the

1/ Other than those reflecting changes in the timing of payments for exports and imports.

freedom of capital movements between most industrial countries had become effective, though its implications were not yet fully understood. 1/

Under fixed exchange rates and slight trade barriers and exchange restrictions, the industrial countries now approximated to a single closed economy. 2/ The power of any national authority to enforce an exceptionally expansionary (or restrictive) policy was circumscribed by the effects of such a divergent policy stance in precipitating capital outflows (or inflows), in promoting greater (or lessened) reliance on imports, and in causing shifts of production away from (or to) supplying export markets rather than home demands. The effect of an exceptionally expansionary (or restrictive) policy stance in one country tended to be disseminated to other countries, and the strength of demand conditions in all the countries of the group was conditioned by the average of the policies pursued in all the countries, allowing for their relative importance. So long as these conditions prevailed, as they did in the later 1960's, the divergence in the realized rates of monetary expansion among the countries of the group was limited by capital flows and the consequences of changes in balance of payments on current account. Differences in rates of

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1/ Canada was much less affected by these changes than the other industrial countries because its current and capital transactions with the United States, its major economic partner, were virtually unrestricted during and after the war. It was also exceptional in not maintaining a fixed exchange rate between 1950 and 1962. However, as Canada followed broadly similar policies to those of the United States over this period, there were only slight variations in the rate.

2/ One can treat the industrial countries as a closed economy during the sixties because the rest of the world was not on balance acquiring, or running down, large claims against the industrial countries; and because producers in the industrial countries were not facing competition from the rest of the world, the bulk of its exports consisting of non-competing primary products. Both of these conditions have changed with the emergence of the oil countries' surpluses and of large exports of manufactures from some developing countries.

inflation--particularly as measured by price indices for industrial products, less so as measured by GNP deflators--were kept down by the fact that prices for a wide range of tradeable goods and services tended to move in much the same way in each country.

Thus the increasing integration of the industrial countries in the early 1960's was marked by a convergence of inflation rates; and rather similar rates of inflation, as measured by GNP deflators, prevailed in the major industrial countries during the late 1960's. The divergence however widened greatly in the 1970's (Chart I). 1/

The U.S. authorities action in permitting a sharp depreciation of the dollar in August 1971, following the earlier decisions of the German and Dutch authorities to allow the D-mark and the guilder to float, signaled the end of the fixed exchange rate system. There followed an awkward interregnum before flexible exchange rates between the U.S. dollar and most other industrial countries' currencies were finally adopted in mid-1973.2/ The fixed exchange rate system had survived earlier exchange rate adjustments (such as the small appreciations of the D-mark in 1961 and 1969,

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1/ The chart shows year-to-year changes in the average price of national output (i.e., the GNP deflator) for each of the seven larger countries. The deflator is calculated by dividing the nominal value of GNP in each year by the estimated value of GNP in constant prices of the base year to obtain an estimate of the change in the average nominal value of a unit of real output since the base year. The deflator is an indicator of the average rise in the price of national output due to increases in the cost of domestic factors of production (largely reflecting changes in wages and salaries) and to changes in profit rates. It does not include the direct effect of changes in import prices on the prices of goods and services.

2/ Almost all currencies were floating between August 15 and December 21, 1971, when fixed rates were reinstated for most currencies, except the Canadian dollar, under the Smithsonian Agreements. The pound was allowed to float six months later, followed by the Swiss franc in January 1973, the lira and the yen in February, and by all the other major currencies in March, eight of the continental European countries then operating a joint float.

Canada's return to a flexible exchange rate regime in 1970, and the large devaluation of the pound sterling in 1967). But the depreciation of the dollar had far more important repercussions because of the crucial role of the dollar as the reserve currency of the system.

Thus one needs to distinguish three periods when considering the economic experience of the last two decades:

(i) The era of fixed exchange rates under slight trade barriers and exchange restrictions, implying automatic pressures for the coordination of demand conditions throughout the group, that lasted through the 1960's until 1970.

(ii) The uncertain interregnum when some countries sought to prevent their rates appreciating, while other countries, notably the United States and the United Kingdom, were prepared to let their rates depreciate;

(iii) The period after mid-1973, when exchange rates between the U.S. dollar and other industrial countries' currencies were changing at relatively frequent intervals; the continental European currencies, other than the lira generally moving more or less together with the D-mark against the U.S. dollar.

Important differences between these periods are apparent in Chart II, which shows the rates of monetary expansion, indicative of the realized policy stance, in the United States and the other eight industrial countries as a group. The influence of the fixed exchange rate regime in enforcing coordination of monetary expansion rates is revealed by the fact that, up to 1970, the rate of monetary expansion in the other industrial countries fluctuates with that in the United States in the face of the very sharp

Chart I

Seven Major Countries: Inflation Rates 1962-1978
(GNP Deflators)

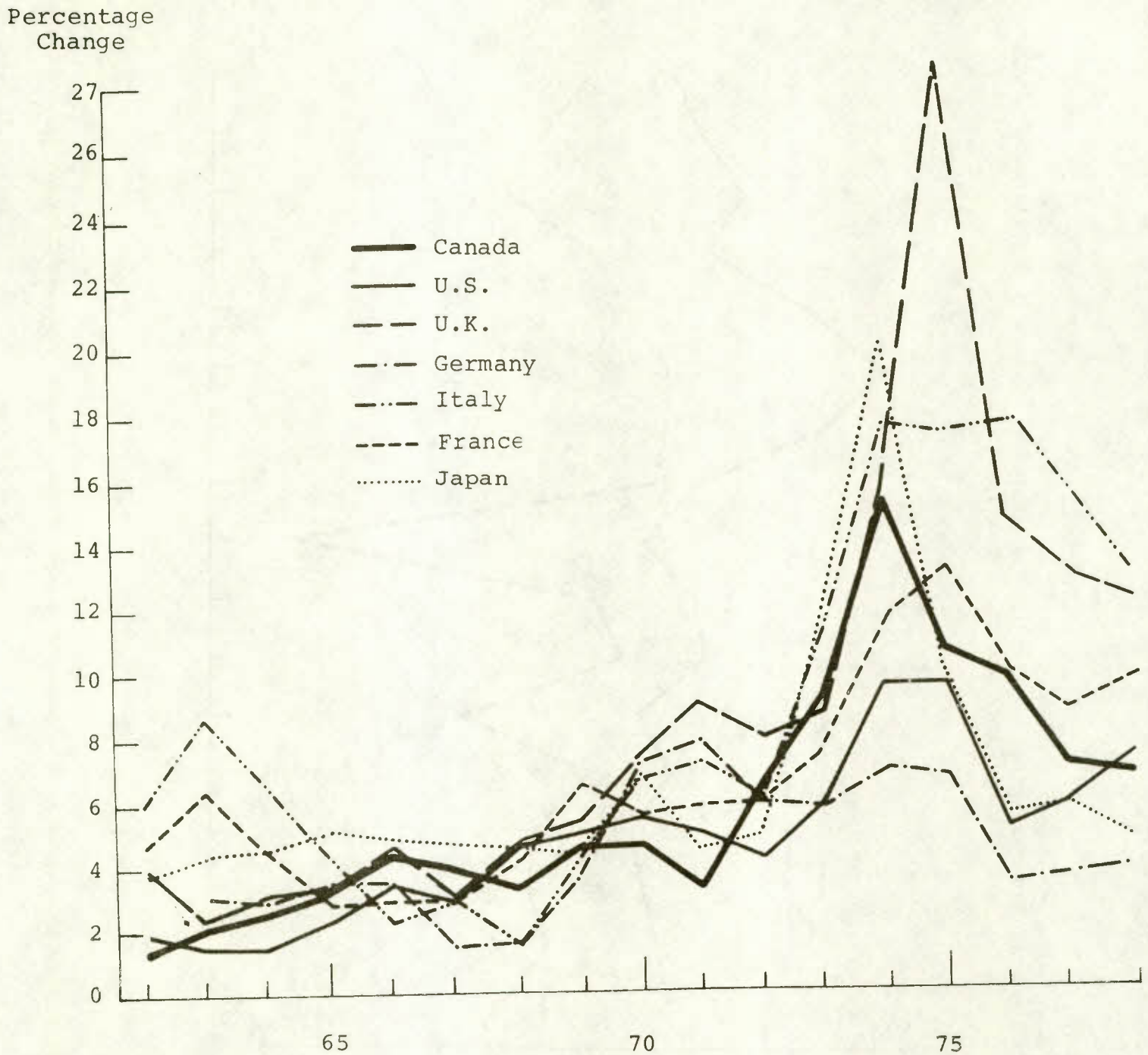
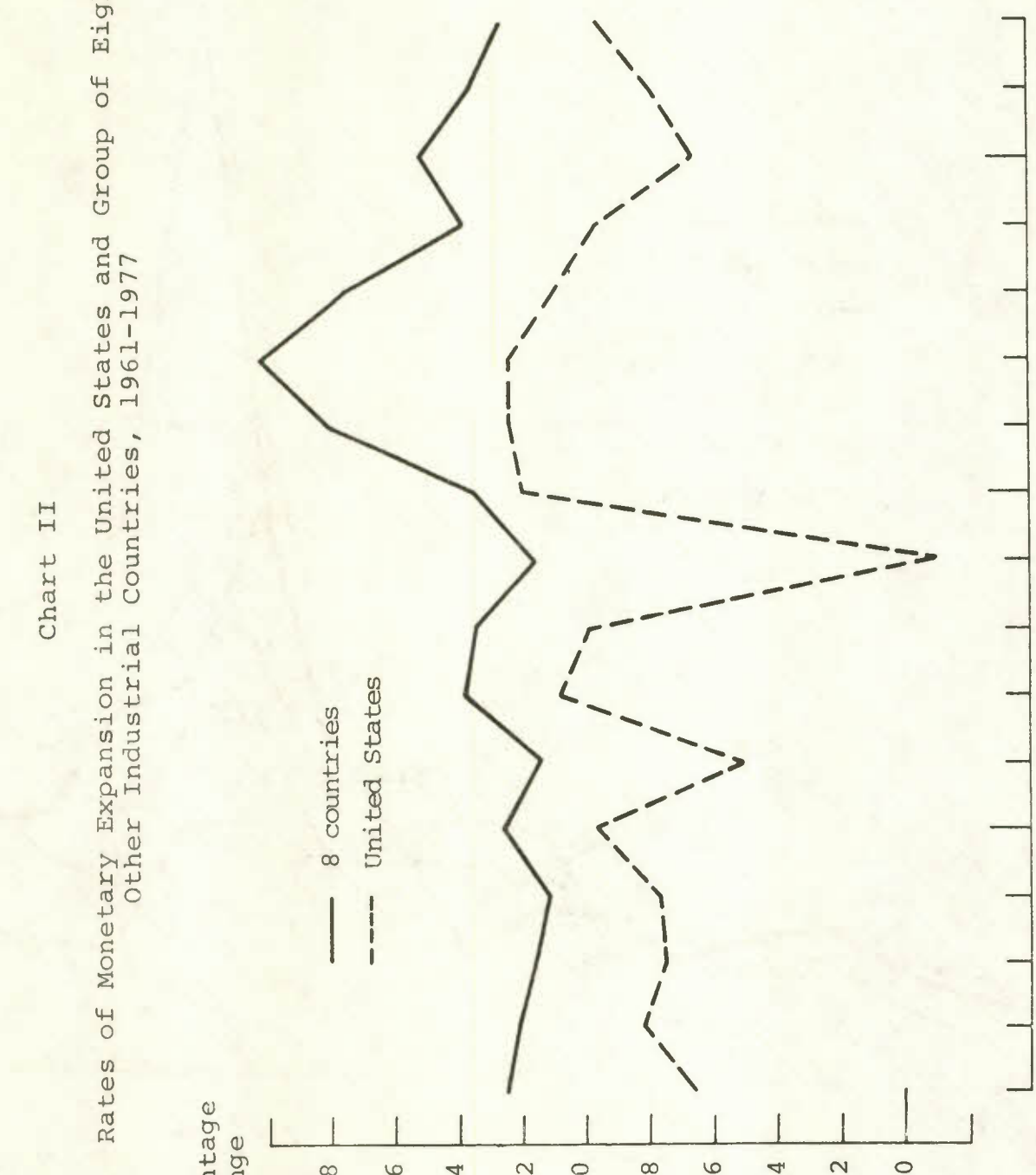


Chart II

Rates of Monetary Expansion in the United States and Group of Eight Other Industrial Countries, 1961-1977



changes in U.S. policies between 1964 and 1970. 1/ If one allows for a steady rise in demand for money holdings in the group excluding the United States, 2/ the rates of monetary expansion in the two areas are similar except in 1966 and 1969 when U.S. money growth is sharply restrained and the rate of expansion is better maintained outside the United States. 3/

This correspondence disappears after 1970. In 1971 and 1972 the rate of monetary expansion in the other countries accelerates, far exceeding that in the United States, where it levels off. This striking change of pattern reflects the unstable exchange rate situation created by the attempts of some governments (notably of Germany and Japan) to maintain undervalued exchange rates, while the governments of the United States and of the United Kingdom (and later of Italy) were prepared to tolerate a further depreciation occasioned by their highly expansionary policies.

In the later 1970's, greater exchange rate flexibility permits a wider divergence of monetary expansion rates and marked changes in exchange rates are the outcome of divergent national policies. In striking contrast to the 1960's, the rates of monetary expansion in the United States and the other industrial countries move in opposite ways in 1975-77, after decelerating together in 1974, when the authorities in the United States, Japan and Germany all sharply restricted domestic credit expansion with the aim of containing inflationary pressures and resisting the consequences of the oil

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1/ See footnotes to pages 10 and 14 for definitions of money supply series.

2/ This was associated with rapid development, urbanization, and rising per capita incomes in countries such as Japan and Italy.

3/ Apart from those years, the fourth quarter to fourth quarter expansion of money in the rest of the industrial countries exceeds that in the United States by about 3 percentage points in every year from 1964 to 1970.

price increase. The movement of nominal income in the countries with flexible rates is more closely determined by domestic policies than was the case before 1973.

Under fixed exchange rates, the realized policy stance in any country is an outcome of domestic policies and of policies in other countries; and the change in the quantity of money within a particular economy may originate in domestic credit expansion or in monetary flows from, or to, other countries. The realized policy stance in each country would only correspond exactly to the effect of domestic policies in the unlikely event that the rate of demand expansion in each country was similar, taking into account any differences in underlying supply conditions, so obviating spillover effects. The wider is the dispersion between national policies, the greater the tendency for the effects of demand policies to spillover from one country to another.

The national authorities can only hope to realize a certain policy stance under fixed exchange rates if they set domestic policies to achieve that result allowing for the impact of other countries' policies. Clearly this leads to problems when the policy goal of one major country, or group of countries, is basically incompatible with that of another; say if one is determined to accelerate the expansion of demand, the other to slow it in order to moderate price increases. The former country will tend to permit a faster rate of domestic credit expansion, the latter a slower rate of credit expansion to offset the impact of the other's policies--but by doing so each makes it more difficult for the other to realize its desired policy stance; and intensifies the balance of payments imbalance between the two areas. As we shall see, this in essence was the problem in the early 1970's.

Under perfectly flexible exchange rates, differences in national demand policies would be reflected in exchange rate changes. The national authorities would have effective control over the expansion of nominal demand within the economy. However, the wider the divergence between national policies, in terms of the rate of expansion of nominal demand in relation to the underlying supply conditions, the larger the probable movements of exchange rates. And the wider the divergence, the more the outcome of national demand management--in terms of real output growth, price inflation, and levels of activity in the export and import competing sectors, and of investment in those sectors, etc.--is likely to be influenced by changes in real exchange rates. That is to say by exchange rate movements which do not correspond to those that would offset the effect of different rates of inflation in altering the relative level of prices at home and abroad. 1/ Thus under perfectly flexible rates, national authorities would have the power to control the rise in nominal expenditure much more effectively than under fixed rates, but the real output and price effects of national policies would still be liable to be influenced by policies pursued by other countries.

In practice exchange rates are seldom, if ever, perfectly flexible; and the actual degree of flexibility has varied between countries and over time since fixed par values were abandoned in 1973.

2. Demand policies, nominal expenditure and inflation

a. The aggregate experience of the group

After experiencing moderate and similar rates of inflation in the mid-1960's--as measured by changes in the average price of their national

1/ Changes in real exchange rates, in terms of wholesale price levels for manufactured goods, are illustrated in Chart X, Section II.

output--all the industrial countries underwent a first marked worsening of inflation between 1967 and 1970 and a further, much more striking acceleration between 1972 and 1974.

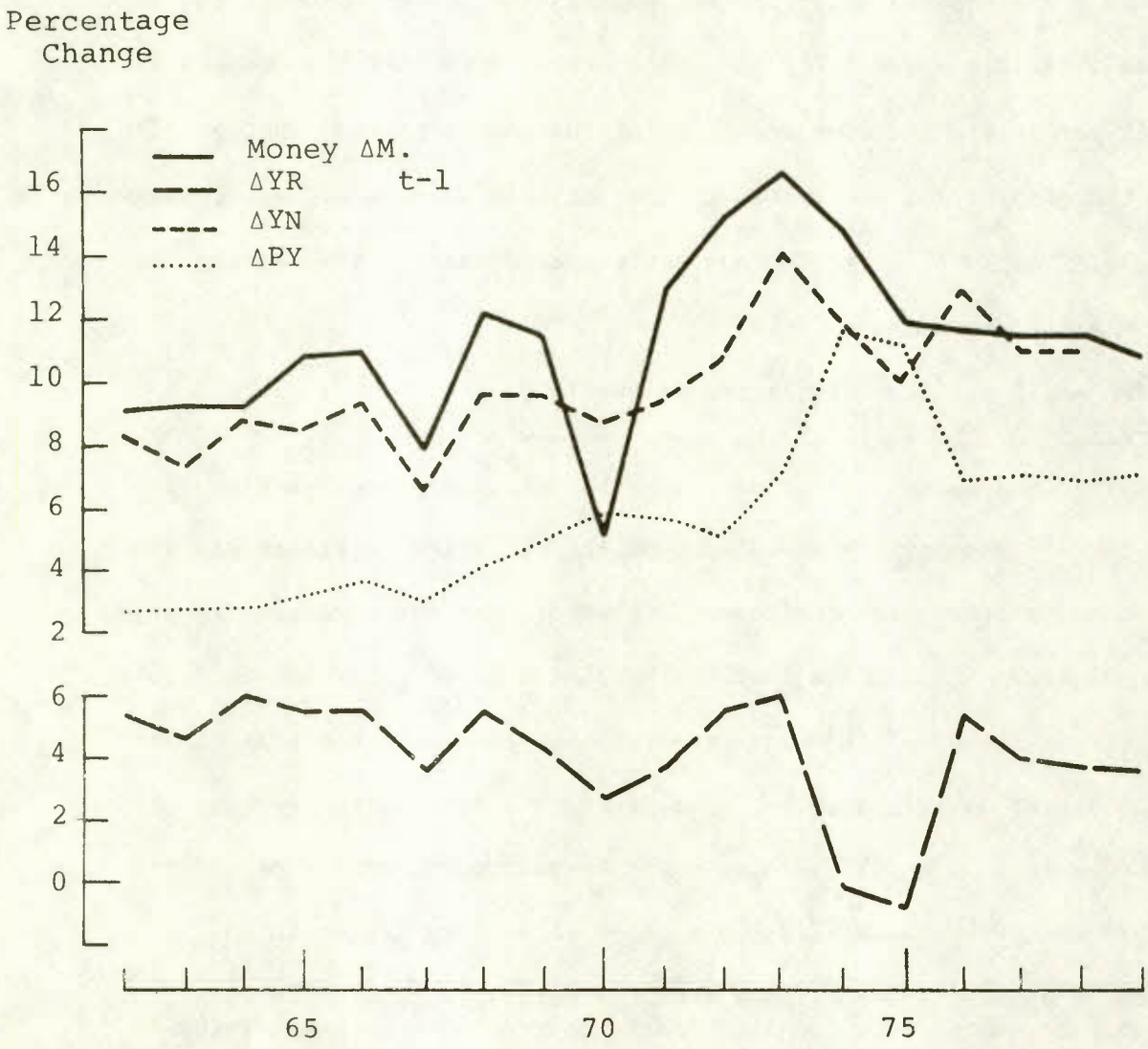
Chart III shows how the average rate of inflation for the group of nine industrial countries (as measured by the year-to-year changes in GNP deflators) was related to changes in the nominal value of expenditure on their output (i.e., to changes in the sum of their gross national products at current prices) and to earlier changes in their aggregate policy stance, here taken to be measured by the average rate of increase in the broadly defined money supply over the preceding year. 1/ The chart strongly suggests that the rate of increase in nominal expenditure reflects the aggregate policy stance of the previous year, while the rate of inflation, as measured by the GNP deflators, reflects the rate of increase in nominal expenditure again with a lag of about a year.

1/ Thus for example, the 1963 observations for the change in aggregate nominal GNP (ΔYN), average change in GNP deflators (ΔPY), and average change in real GNP (ΔYR), show the changes between the years 1962 and 1963, while the observation indicating the earlier policy stance (ΔM_{t-1})) relates to the change in aggregate supply of money and quasi-money between end-1961 and end-1962.

The average increase in broad money is the end-fourth quarter to end-fourth quarter change in M_2 for each country, as published in International Financial Statistics, weighted by the dollar value of M_2 in the former period, at the exchange rate of the former period. The U.S. series are for the definition, as published in IFS up to 1979 (see p. 14, footnote 1). The average increase in the domestic currency value of GNP is the average of the year-to-year change for each country, weighted by the dollar value of its GNP in year t-1. The average increase in domestic currency prices is the average of the year-to-year change in the GNP deflator of each country, weighted by its share in real GNP, (at 1970 prices and exchange rates) in year t. The change in real GNP is the change in the aggregate index of real GNP at 1970 prices and exchange rates.

Chart III

Group of Nine Industrial Countries: Monetary Expansion and Year to Year Increases in Nominal GNP, Real GNP and Prices 1962-78



The interpretation of the relationship between changes in money supply 1/ and changes in nominal expenditure illustrated in the Charts III-V, constitutes a crucial issue in the controversy between "monetarist" and "Keynesian" economists, and it has important policy implications that are discussed later in this paper. The presentation in the charts does not imply support for the "monetarist" view that the changes in money stock per se are the dominant cause of changes in nominal income. The change in the quantity of money held by the non-bank sectors of each economy can be regarded as an indicator of aggregate demand factors influencing the growth of nominal expenditure.

b. The acceleration of inflation in the late 1960's and early 1970's

Chart III does not support the notion that the sharp acceleration of inflation in 1974 was largely the effect of the oil price crisis or was due to some sudden deterioration in economic behavior, explosive changes in price expectations, etc. It suggests that the acceleration of inflation to double digit figures in the mid-1970's was primarily due to the highly expansionary stance of policies in 1971 and 1972, resulting in a very rapid increase of nominal income in 1972 and 1973 followed by a sharp acceleration of inflation in 1973 and 1974. Similarly the acceleration of inflation in the

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1/ The money supply series differs from the series calculated in the McCracken Report, which uses constant fourth quarter 1970 exchange rates in calculating the aggregate broad money supply of the group. It therefore gives an unduly large weight in later years to the changes in countries whose currencies had depreciated after 1970 (such as United States, United Kingdom and Italy) and an unduly small weight to those in countries whose currencies had appreciated, notably Germany, Netherlands and Sweden.

Strangely enough the McCracken group did not relate monetary changes to changes in nominal and real GNP, although the interdependent effects of demand changes upon real output or prices are likely to be more evident over the wider aggregates than for partial components such as consumer prices or industrial production.

late 1960's appears to reflect the expansive aggregate policy stance in 1967 and 1968. It is noteworthy, however, that in 1970 under worsening inflation, the same rate of increase in nominal GNP as in 1969 is maintained despite the very restrictive policy stance of 1969.

The chart suggests that if one is to understand why the drastic worsening of inflation occurred in the mid-1970's one must ask why such an expansionary policy stance was adopted by the industrial countries in the late 1960's and in 1971-72. This question is addressed in Section II of the paper.

Two anomalies stand out in the charts. One is the rapid rise in nominal expenditure outside the United States in 1969-70, quite out of line with the realized policy stance, as indicated by the earlier rate of monetary expansion for the group: this is associated with a marked acceleration of inflation (Chart IV). The other is the much more rapid acceleration of monetary expansion in the other countries than in the United States in 1971 and 1972 that has already been mentioned (Chart II).

In considering how the drastic worsening of inflation between the mid-1960's and the mid-1970's came about, we shall be especially concerned with these two episodes, and with the connection between them.

c. The impact of greater exchange rate flexibility

Chart III also provides some indication of the change in the price and output responses of the industrial economies that was associated with the implementation of greater exchange rate flexibility. As can be seen, after 1975 the rate of increase in nominal expenditure is much higher in relation to the preceding rate of monetary expansion than during the 1960's and early

Chart IV

Group of Eight Industrial Countries, Excluding U.S.
Monetary Expansion and Year to Year Increases
in Nominal GNP, Real GNP and Prices, 1962-78

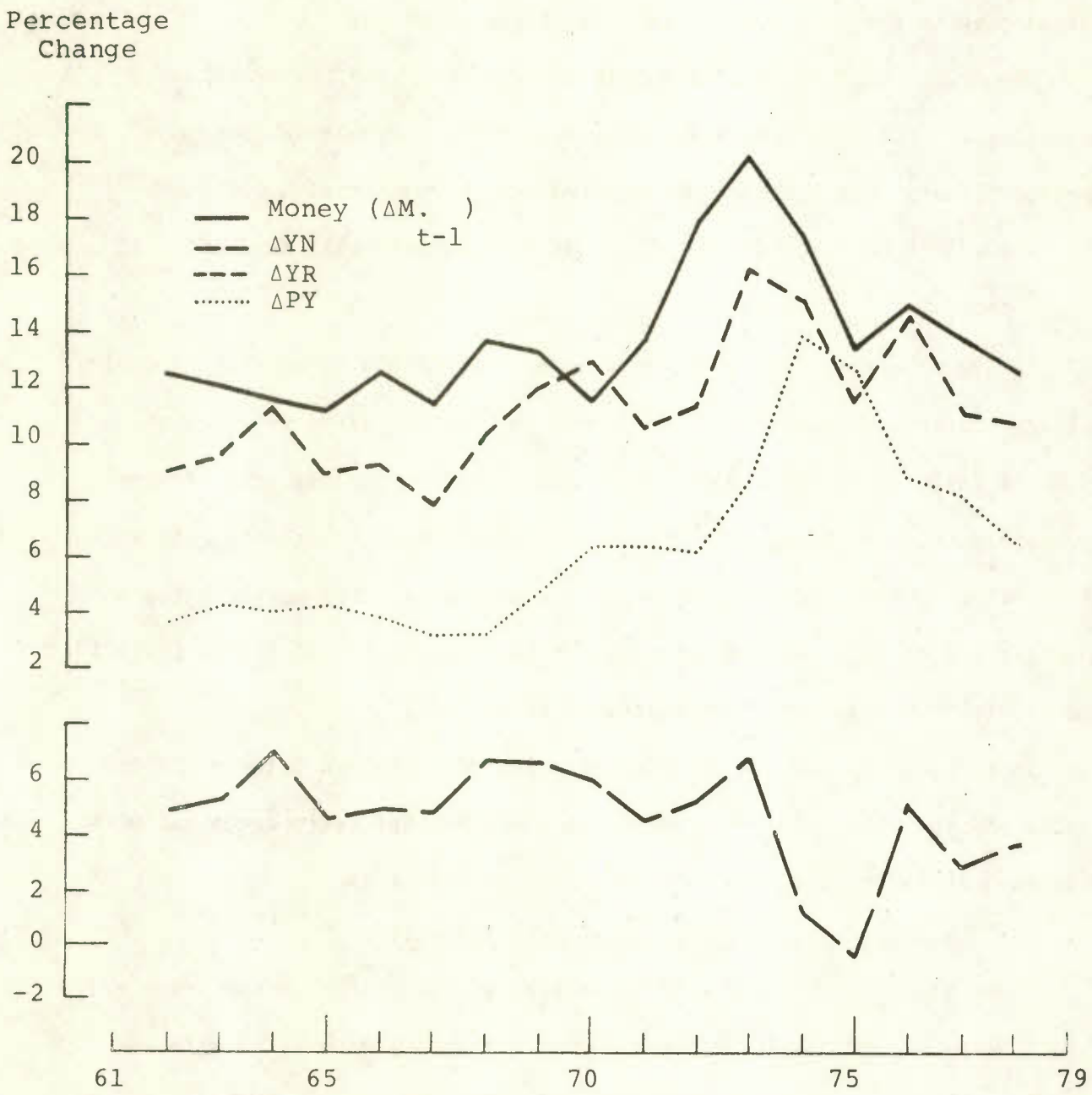
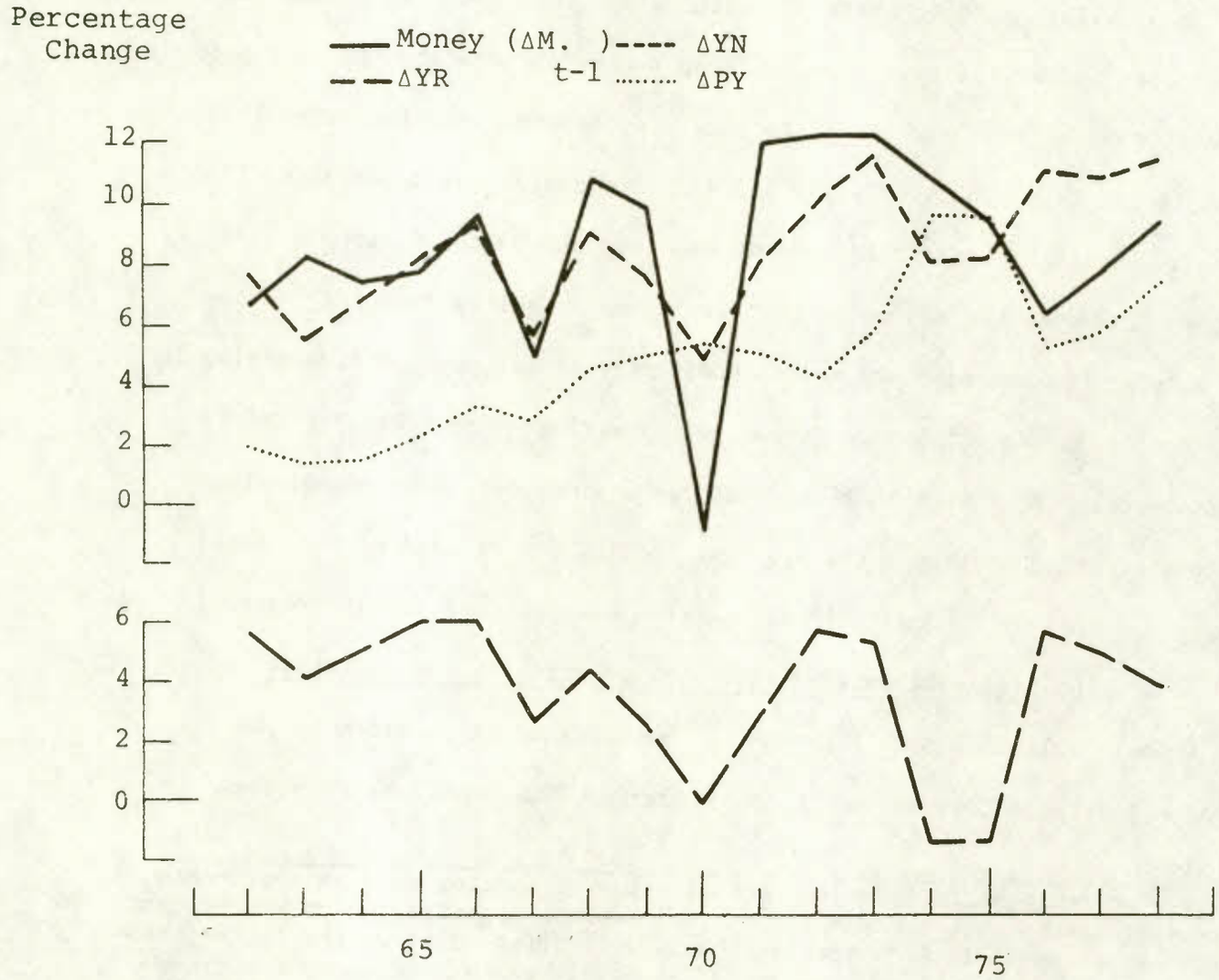


Chart V

United States: Monetary Expansion and Year to Year Increases in Nominal GNP, Real GNP and Prices 1962-1978



1970's due to a higher rate of inflation. The average year-to-year rise in real GNP in 1976-78 is somewhat lower than in the early 1960's, and not very different from the average in 1967-71.

The greater power of national policies to influence the development of nominal income under the more flexible exchange rates of the later 1970's is illustrated in Chart IV, which shows that the rise in nominal GNP in the industrial countries other than the United States is much more closely related to their aggregate rate of monetary expansion after 1973 than in the late 1960's or early 1970's. One could have expected to find a corresponding, closer relationship also for the United States in Chart V, but in this case the change is obscured by major shifts from the holding of monetary to non-monetary assets and institutional changes economizing in the use of money, which were encouraged by stringent monetary restraint. 1/ Consequently the change in broad money as defined here does not provide a consistent indicator of the aggregate policy stance, and of its likely impact on nominal income in 1976, comparable to that in earlier years. 2/

d. The trade-off between the level of activity and inflation

Chart III sheds some light on the much discussed question of the reason for the deterioration in the short-run "trade-off" between the

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1/ Such changes included the substitution of assets, such as short-term Treasury issues, not included in M_2, for savings deposits, which was brought about by interest rates exceeding the legal ceilings set for the latter; and institutional innovations permitting economy in the use of money for transaction purposes, encouraged by the sharp rise in interest rates. These developments and other causes of the disparate movements of the changes in money growth and nominal expenditure in the United States after 1973 are touched upon in Section II (pp. 39-40).

2/ The U.S. monetary data were redefined in 1979. The M_2 series used here is based on the old definitions and differs from that published in more recent issues of International Financial Statistics principally because large Certificates of Deposits (NCD's) are here included in the broad money supply.

level of activity and inflation, and the "disappearance" of the Phillips curve relation between the level of unemployment and the rate of inflation. The chart shows that in 1969 and 1970, and much more strikingly in 1974, a decline in real output growth (and increase in unemployment), is associated with a marked acceleration in the rate of inflation. This apparently comes about because the lagged effects of the sharp acceleration of nominal expenditure between 1967 and 1968-69 and between 1972 and 1973, are still influencing wage and price increases when, under the influence of more restrictive policies, the current expansion of nominal expenditure flattens out in 1969 and 1970, or is sharply reduced in 1974. Consequently the restraint of nominal expenditure coincides with an acceleration of inflation and produces a sharper reduction of real output growth and rise in unemployment than would have occurred had demand not accelerated markedly just before the restrictive policies were enforced.

The simple pattern of lagged relationships described here in fact implies that the apparent short-term "trade-off" between the level of activity (as evidenced by the rate of real output growth or by other associated variables, such as the level of unemployment or the level of capacity utilization) will differ with changes in the pattern of successive rates of expansion of demand over time.

The issue of the relation between the rate of inflation and the level of capacity utilization or the level of excess demand in the labor market is an important one. During the sixties policymakers came to rely upon--and were eventually misled by--a belief in a stable relationship of this kind. The debate on this question has been particularly lively in Canada,

and has reached a high level of technical competence and intelligibility. So it is appropriate to discuss the question in the Canadian context, as is done in Section III below.

3. The part played by changes in the quantity of money in determining nominal income: The "Monetarist" versus the "Keynesian" view

The relationship between monetary expansion and changes in nominal expenditure lies at the heart of the controversy between "monetarist" and "Keynesian" economists. An understanding of the basic points at issue is vital for an interpretation of the experience of the seventies, both because these conflicting views strongly influenced the policies adopted by governments, and because the lessons drawn for the future from the disastrous experience of the last decade invariably are colored by one or other set of ideas, even when this is not explicitly stated.

The difference between the "monetarist" and the "Keynesian" economist stems from profoundly different assumptions concerning the nature of the real economy. The monetarist position rests on a belief in the stability of the private economy, and largely abstracts from the existence of a government sector. The Keynesian regards the private economy as naturally subject to strong cyclical and secular fluctuations and emphasizes the importance of the public sector.

a. The monetarist view

The monetarist approach treats changes in the supply of money as the main cause of changes in nominal income, on the assumption of a stable demand for real money balances. 1/ That assumption, which is not accepted

1/ See definition by Thomas Mayer (p. 2) as amended by Harry G. Johnson (p. 127), in The Structure of Monetarism (edit. Thomas Mayer, published in Canada by George J. McLeod Ltd., Toronto). "Real money balances" are nominal money holdings of a constant purchasing power in terms of an index of the general price level.

by the Keynesian economist, depends on the inherent stability attributed to the private sector. Belief in the flexibility of relative prices and of relative wages is of crucial importance in this connection.

The monetarist economist views the real economy as a system of efficient, competitive markets responding to the laws of demand and supply. Shocks and disturbances may affect the general level of output and employment for a time. But left to itself the system will soon adapt to shifts in supply and demand. Relative price increases will divert demand to other factors of production or products, the higher demand prices for alternatives calling forth increased supplies. Excess capacity or unemployment in particular sectors will bring down prices and wages there.

Since the real economy is held to be subject to strong equilibrating forces, disturbances are seen to originate, not in instability of the private sector, but in the behaviour of the monetary authorities. If the monetary authority maintains a steady rate of expansion of the money supply, the consistent operation of the forces of demand and supply in the real economy will ensure that the "natural rate" of unemployment is maintained with real output rising steadily at a rate determined by such factors as population trends and technical progress. A constant rate of money growth, in relation to the underlying growth of supply set by such factors, will result in a stable rate of inflation, with price stability as one case. In an economy not subject to real output growth, a stable money supply is consistent with price stability; in a growing economy, price stability requires the money supply to rise in line with the underlying growth of supply.

If the monetary authority allows the rate of money growth to change, underlying supply conditions in the real economy remaining the same, the

the public will find itself with larger (or smaller) money balances than it desires (given the growth of real income and the going rate of price increase). Efforts to dispose of excess real balances, or to make up for the shortfall of desired real balances, then impinge on the economy. For example, efforts to dispose of money holdings result in increased spending on other financial assets or on real goods and services. The effect of these transactions is to bid up the price of alternative financial assets, lowering nominal rates of interest or the cost of raising share capital, and to increase prices and/or the level of activity and employment in the real economy; and vice versa. 1/

In the monetarist view, erratic supply shocks or shifts in demand do not affect the general level of prices because they set in motion forces of substitution, making for changes in the structure of output, and because the level of aggregate demand is determined by the supply of money via real balance effects. To the extent that a supply shock does raise the general price level by sharply increasing some prices, the public finds itself with smaller real balances than it demands. This causes increased demands for money assets in place of other financial assets and reduced spending on real goods and services, bringing about declines in prices, provided the monetary authority does not permit the growth of the money supply to accelerate. Under these circumstances, if industry A raises its prices,

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1/ Owing to the influence of contracts, and the time required for recontracting, negotiating wage settlements, etc., the effect in raising prices and wages is likely to be felt with a lag, and the initial result may be a rise in the rate of real output growth, and a drop in unemployment below the "natural rate." But if the monetary authority maintains the new higher rate of monetary expansion, the real economy will return to the same rate of real output growth as before, with the "natural rate" of unemployment.

this will cause price declines somewhere else in the economy. 1/ The assumed flexibility of costs and prices in response to changes in demand and supply in particular markets, ensures that the movement of the general price level is independent of changes in particular prices and so renders the general rate of inflation a purely monetary phenomenon.

If the economy functions in the way assumed, the demand for money cannot change abruptly while a steady growth of money supply is maintained. So the monetarist does not need to ask whether an increase in the quantity of money has come about in response to a change in demand for money or as a result of a change in money supply brought about by the monetary authority. If the former, the change in quantity of money observed would not, of course, be the prime causative factor of the change in nominal income found to be associated with it.

b. Lack of realism

In the monetarist view a sharp change in the supply situation for a major commodity (such as oil or food) cannot affect the general level of prices, nor can a generalized wage explosion occur unless the monetary authority accommodates the increase by a faster rise in the money supply. "One way of determining whether someone is a Keynesian or a monetarist is to ask him for a quick and intuitive answer to the following question. 'Suppose the price of petroleum rises. What will this do to the average of other prices?'" 2/

1/ More generally, if industry A raises its prices by more than the going rate of inflation, the average rate of inflation will be maintained, and other industries will have to raise their prices by less than the average rate of inflation (i.e., accept a decline in real earnings) provided that the monetary authority does not allow the rate of money growth to accelerate.

2/ Thomas Mayer, op. cit., p. 18, footnote 1.

The monetarist model abstracts from such characteristics of the real world as the specificity of capital and skills, the complementarity of capital, labor, materials and sources of power, and the prevalence of imperfect competition in markets for products and labour. When one recognizes that a large rise in the price of oil will have an immediate impact in raising production costs over a wide area of the economy, because capital and skills cannot readily be switched from oil intensive production to non-energy dependent outputs and because of fixed input-output coefficients, and that an increase in demand for oil substitutes is likely to raise their cost also, it appears inevitable that the increase in the price of oil must cause an upward shift of the price level even if the monetary authority keeps the growth of the money supply unchanged. The rise in the price level would imply a fall in the real value of the money stock and an unsatisfied demand for for real balances. An attempt to prevent the rise by preventing an acceleration of money growth would have slight effect in moderating the increase in prices, and most effect in holding down output, increasing unemployment and discouraging the investments in capital and skills needed to make possible the shifts required in the structure of output.

With the widespread prevalence of imperfect competition and exploitation of monopolistic advantages, both by enterprises and labor, the level of wages and mark-ups in different sectors at any time is influenced in some degree by exploiting barriers to entry and limiting access to techniques and know-how in various ways (such as by trade unions, protection of patents and licensed franchises, etc.). This context implies that prices and wages are unlikely to be highly flexible in the face of reductions in demand; and that the unemployed wage and salary earner may typically not

be able to find work by accepting a slightly lower real wage for his skills. Hence the pursuit of an unrealistic monetary target following a major relative price disturbance may result in persisting stagflation--with increased unemployment, reduced productivity and continuing inflation.

c. The Keynesian view

The Keynesian economist is apt to disregard the demand for money as a parameter, since he views the demand for money as unstable because the real economy is subject to fluctuations stemming from the instability of private investment. "Hence in predicting expenditures the Keynesian prefers to look at what is happening to the rate of interest, thus taking into account changes in both the demand for, and the supply of money." 1/ In the Keynesian analysis, the quantity of money is in itself a variable responding to the effects of demand management and developments in the real economy and Keynesian economics actually developed as a reaction against the rigid "quantity theory" of See's law.

d. Some comments

As with so many controversies in economics, the dispute between monetarists and Keynesians concerns the direction of causation underlying an observed relationship. The two sides are actually focusing on much the same relation since the change in the quantity of money usually provides a fairly good indication of the combined effects of the "Keynesian" variables upon the growth of nominal income. 2/

1/ Mayer op. cit., page 9.

2/ Since it reflects (a) the extent to which the public sector is financing a deficit by accommodation by the Central Bank (creating money), by borrowing from abroad (capital inflows), and by sale of public debt tending to raise domestic interest rates, and to reduce holdings of money and spending on investment and durable goods, holding down nominal demand; and (b) the extent to which the monetary authority is intervening to keep

One does not have to subscribe to the monetarist view that it is the change in money per se that determines the change in the aggregate nominal expenditure, prices and output, in interpreting the relation observed between changes in the quantity of money and subsequent changes in nominal income. The change in the quantity of money may capture the combined effects of fiscal and monetary policy (including exchange rate policy) upon prospective nominal income. It is used as an indicator in this sense in the preceding sections of this paper. As an indicator of the combined effect of policies, the change in broad money supply was unduly neglected by Keynesian policymakers, whose failing has sometimes been to misjudge the total effect of policies by not attempting to see the complete picture.

If one recognizes that the demand for money may vary and that the general rate of inflation over a period of months or years is not a purely monetary phenomenon, but may be liable to accelerate due to supply conditions for basic commodities, or to a sharp increase in wages in a particular sector--it follows that the monetary authority is faced with the decision whether or not to accomodate changes in the demand for money. One can now see how the relation between the rate of expansion of money supply and the subsequent change in nominal income may come about, not as a simple case of cause and effect, but as a result of joint determination via changes in the real interest rate.

2/ (Cont'd from page 20) down interest rates, to accommodate the public sector's debt financing needs, to promote credit expansion to the private sector or to influence the exchange rate; (c) the size of the balance of payments surplus on current account; and (d) the extent to which a tendency for interest rates to rise (or fall) has been frustrated by private capital inflows (or outflows), offsetting tendencies that would otherwise have been felt for the level of nominal expenditure to fall (or rise).

With an acceleration of the rate of inflation, the demand for nominal money balances will rise . If there is no slack in the control over credit expansion, nominal interest rates will tend to go up. The monetary authority then has to decide whether to allow rates to rise or whether to hold them steady by easing credit. Should interest rates rise more or less in line with the perceived acceleration of inflation, so that the real rate of interest is approximately maintained, the growth of demand for money in nominal terms, and of the supply, will accelerate more or less in proportion with the acceleration of the rate of inflation and the real value of money balances will be approximately maintained. If the monetary authority seeks to prevent an acceleration of monetary expansion, it will have to enforce an increase in real interest rates. If the authoritiy tries to stabilize nominal interest rates in these circumstances, it will, of course, lower real interest rates, tending to increase the demand for, and the supply of, money more than in line with the acceleration of inflation. 1/

If the monetary authority decides to stabilize nominal or real interest rates in the face of a change in the demand for money, the quantity of money has to change by however much is needed to keep the (nominal or real) interest rate stable. On the other hand, if the rate of money growth is to be stabilized, the nominal and real interest rates have to be allowed to rise (or fall) by however much is needed to bring the demand for money balances into line with the steady growth in supply. While the observed relation between the change in the quantity of money and the subsequent change in nominal income may be similar in these two cases, the causal sequence is, of course, quite different. In the first case, the rate of money growth and the subsequent rate of increase in nominal expenditure (income) both accelerate with the acceleration of inflation

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1/ This scenario essentially explains the excessive monetary expansion of the early 1970's, the industrial countries then approximating to a single economy, certain regions facing sharply increased cost inflation, and the paramount authority stabilizing nominal interest rates. See Section II, pp. 35-37.

and thus the rate of real output growth is maintained or increased. In the second case, the rate of inflation increases but the rate of money growth is maintained; the unsatisfied demand for higher nominal money balances serves to restrain the rise in nominal spending. 1/ In this case the rate of increase in nominal expenditure and that of the money supply, remains roughly unchanged because the demand for money is brought into line with the restricted supply by holding down expenditures directly or via higher interest rates. While the nonaccommodative policy may have some effect in holding down the rate of inflation, it is almost certain to cause a lower rate of real output growth and reduction in employment in the next period.

An overly accommodative, or an overly restrictive, policy--such as holding nominal interest rates stable in the face of explosive wage increases, or reducing the rate of credit expansion in the face of a very sharp inflationary price shock (both policies which, as we shall see, were actually adopted during the early seventies) will result in abnormally low (even negative) or abnormally high real interest rates. The fact that these rates are not expected to persist will reinforce their effects in strengthening, or curbing, the demand for money and the rate of increase in nominal expenditure in the short run, by creating incentives to speed up, or delay, borrowing and spending. The results are not, however, likely to be symmetrical, since it is easier to postpone real investment projects that have been planned than to increase real investment above planned levels at short notice. For this reason, and also more generally because there are greater constraints on raising than on cutting back real output in the short run, an overly accommodative policy is likely to have its principal effects in raising prices; while an overly restrictive policy

1/ Whether because money holders deliberately reduce expenditure in order to maintain the real value of their money holdings; or because rising interest rates cause reduced spending on inventories, lower housing starts, reduced spending on consumer durables, etc.

is likely to have more impact in holding down real spending and income. By encouraging a subsequent bunching of spending decisions on rebuilding inventories and fixed investment, an overly restrictive policy may predispose the economy to bottlenecks and resulting cost pressures when monetary restraint eases.

An unstable demand for money--a Keynesian assumption--and an accommodative monetary policy will result in a close correlation between the change in the rate of monetary expansion and the subsequent change in the rate of inflation. Ironically, this would appear to substantiate the monetarist thesis that the rate of price increase is a purely monetary phenomenon--although in this case it is not. If the demand for money is unstable, the relation between the rate of monetary expansion and the rate of inflation may well prove to be far less stable when a money growth target is adhered to, than was the case under accommodative monetary policies (such as those applied in the United States and most other industrial countries during much of the period up to 1974).

To conclude, if the movement of the general price level is liable to be affected by erratic supply shocks and changes in relative prices and wages, the demand for money is not stable as assumed by the monetarists. The demand for money will be liable to vary under a steady growth of money supply, and a stable monetary policy will not suffice to ensure stable growth under a constant rate of inflation. The maintenance of a steady rate of monetary expansion will not necessarily produce a more stable real economy than a more "interventionist" policy. Once one relaxes the monetarists' assumptions about the real economy, economic policy ceases to be merely a matter of consistency on the part of the monetary authority, and becomes a question of "political economy."

II. The Nine Countries' Experience of Inflation: A Historical View

Although inflation is an international phenomenon in a closely integrated industrial world, it has its roots in national policies and represents a problem that can only be tackled by national authorities.

We turn now to see how the problem of persisting rapid inflation actually originated in the integrated but uncoordinated industrial world of the late sixties and early seventies.

1. How severe inflation originated

a. The effect of discordant policies in the United States and continental Europe

The inflationary crisis of the late sixties stemmed very largely from the refusal of the two major countries in the system--the United States and Germany, the dominant economy in Europe--to abide by the constraints on policy necessary for the successful operation of the fixed exchange rate system. Both pursued policies ultimately incompatible with the maintenance of a fixed exchange rate for their currencies: the U.S. authorities by permitting an excessive rate of credit expansion, the German authorities by their insistent efforts to maintain a lower rate of inflation than was consistent with keeping the exchange rate unchanged. 1/ Excessive credit expansion in one half of the industrial world--and in the international reserve currency country--was incompatible with the maintenance of price stability in the other countries and of fixed exchange rates vis-a-vis

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1/ Even before the shift of U.S. policies to a highly inflationary stance, it was clear that the German authorities were resisting the adjustment mechanisms of the system. Restrictive demand policies in 1965, aimed at restoring greater price stability, were in effect frustating the natural tendencies for the level of costs and prices in the "open" sectors of the economy to be brought into line with those in competing countries once full employment prevailed in Germany.

the U.S. dollar. Failure to resolve this conflict underlay the inflationary crisis of the seventies. 1/

While intense demand pressure was building up in the United States in 1967-68, two years of strongly restrictive demand management in Germany, coupled with the tightening of monetary policy in the United States in 1966, had imposed a severe balance of payments constraint on other European countries, bringing about a further stiffening of already restrictive policies in France and Italy, and a sharp tightening in the United Kingdom (Chart VI). There was a marked rise in unemployment and idle capacity in most European countries in 1966-67 (Chart VII).

The simultaneous emergence of strong demand pressure in North America with weak demand conditions and under-utilized capacity in most of Western Europe 2/ heightened the tendency for demand to spill over from one area to the other. 3/ In the United States unemployment had already been reduced to an historically low level by 1966, and the strong demand for labor resulted in a bidding-up of the wages of unorganized workers not covered by collective bargaining, and a more rapid rise of wages in the nonunionized than the unionized sector. This had the consequence of strengthening union wage demands when long-term contracts subsequently came up for renewal. By 1968 the acceleration of inflation resulted in a marked loss of competitiveness vis-a-vis European countries; and the

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1/ For a historical review of how this conflict came about, see Braun "Some Reflections on Incomes Policy and the International Payments System" Economic Council of Canada Discussion Paper No. 132.

2/ The expansionary shift in U.S. policies in 1967-68 was nearly matched in Canada and the United Kingdom (see Chart VI).

3/ The impact of U.S. policies was aggravated by their unplanned character. In several countries (notably Canada, Sweden, and the Netherlands) the acceleration of credit expansion was influenced by increases in budget deficits and high public sector borrowing intended to protect the economy from the deflationary impact of a slowdown in the United States and Germany.

Chart VI (page 1)

Nine Countries: Excess Domestic Credit Expansion and Government Borrowing: Changes in Unit Labour Costs 1962-78

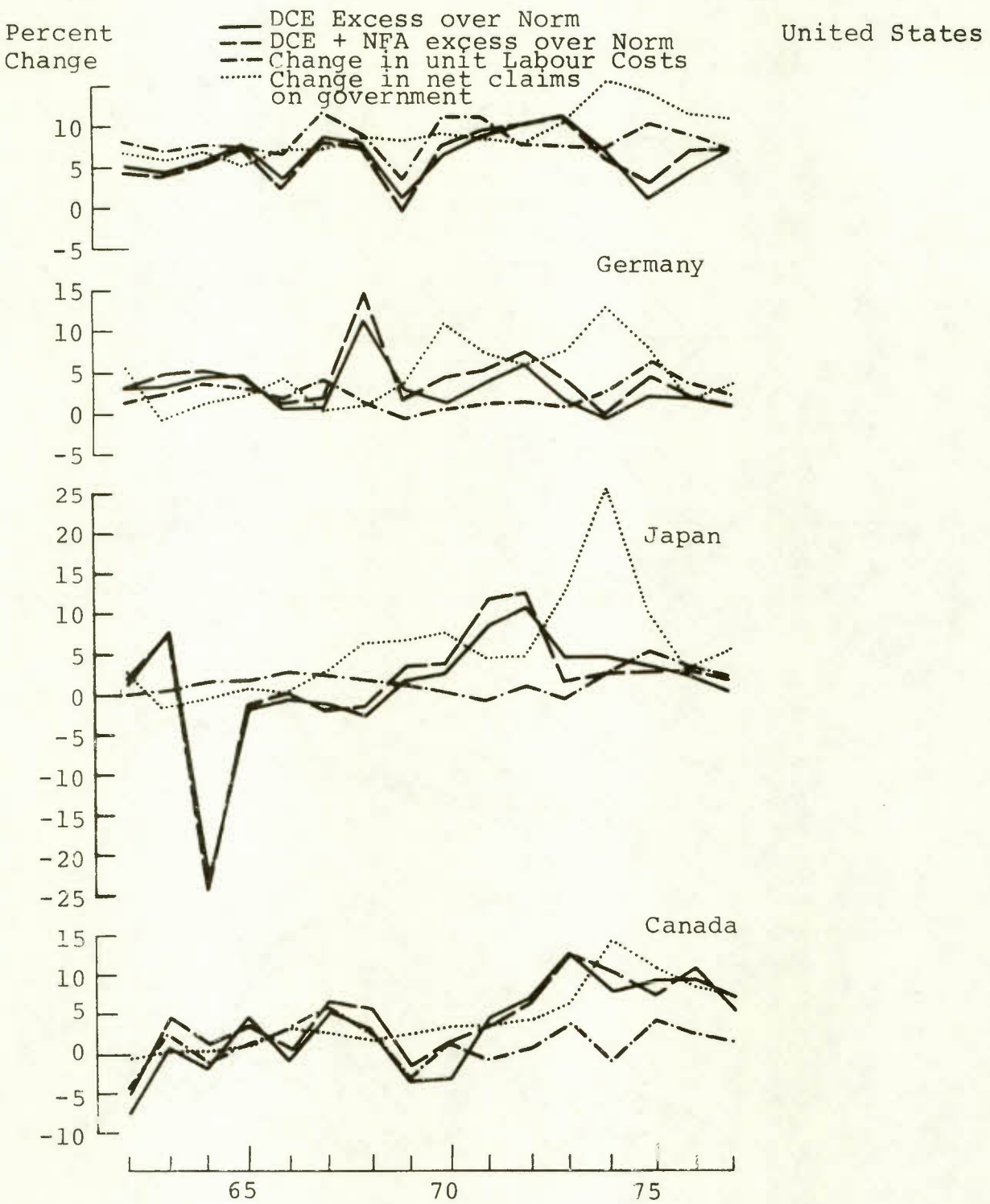


Chart VI (continued)

(Legend) - see page 1

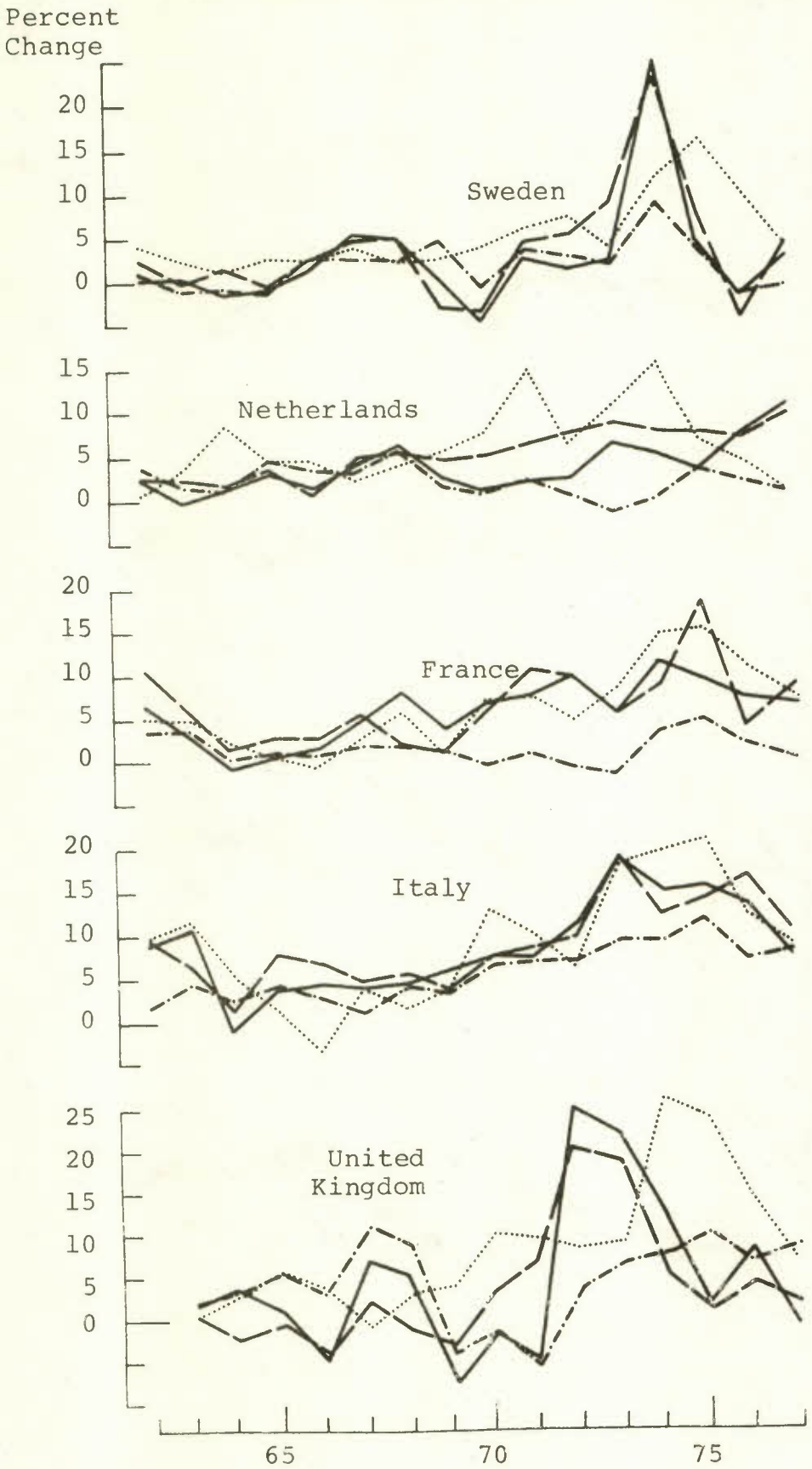
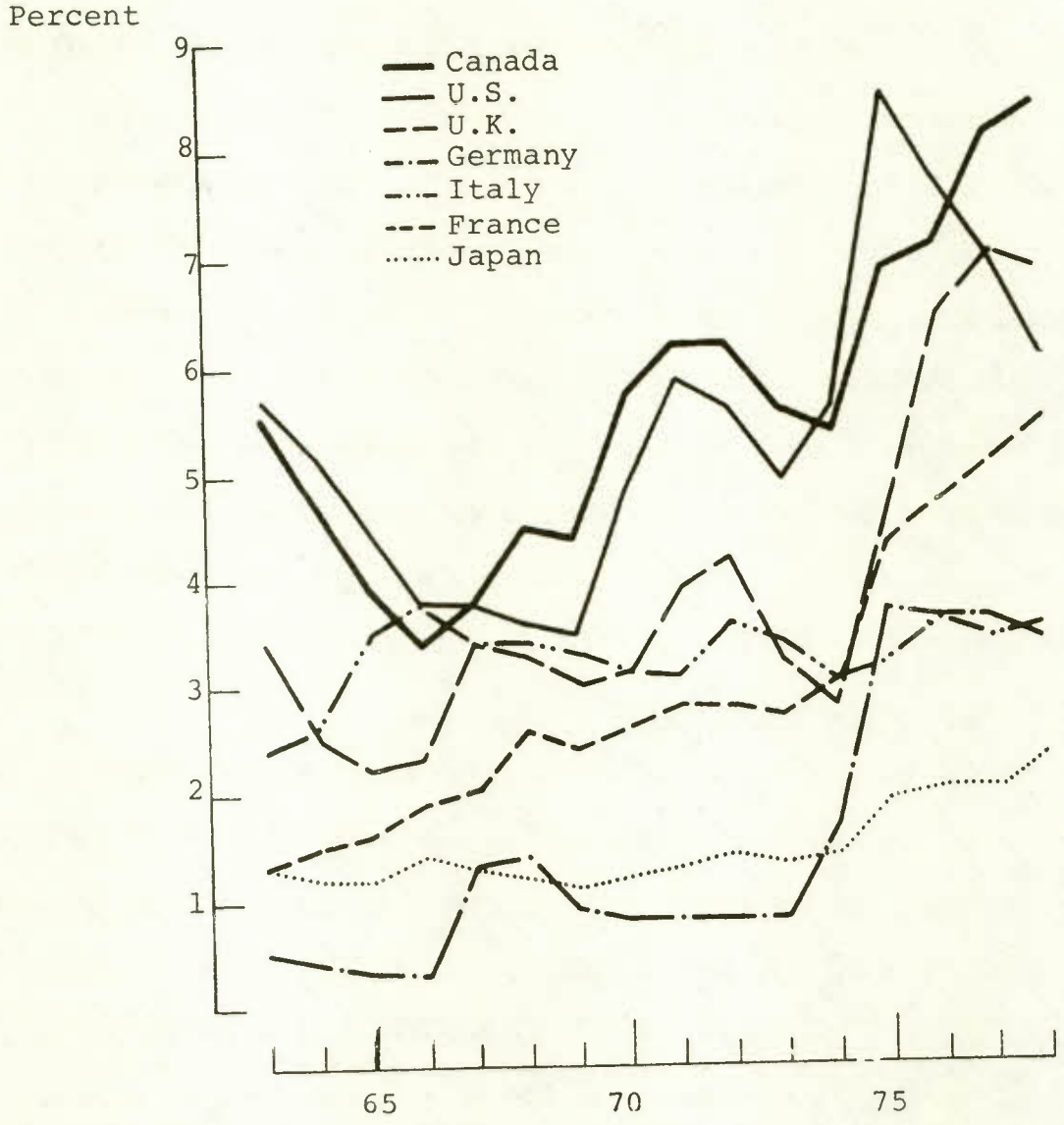


Chart VII

Seven Countries: Unemployment 1963-1978

(Percentages adjusted to be Comparable with U.S. Concept)



competitive advantage of European producers was strengthened by the ready availability of capacity and labor and by moderate recent wage increases. 1/ Thus the stage was set for an intense European export boom, and surging industrial profits in 1968-69.

The rise in industrial profits occurred against a background of rising social tensions in several countries, where the effects of restrictive fiscal policies and curbs on public expenditure over a period of years, were felt in increasing shortages of low cost housing, inadequate public transportation and worsening social services. Dissatisfaction intensified after consumer prices started to accelerate with steeply rising world commodity prices in 1967, influenced by the U.S. expansion and the Arab-Israeli war. The subsequent wave of unrest set off a chain of consequences lasting into the 1970s; it was an important factor underlying the disproportionate rise in nominal expenditure and prices outside the United States in 1969-70 that was noted in Section I (Chart IV).

b. Wage explosions in Europe 1968-70

In France, renewed inflation and sharply rising profits, following two years in which wage increases and budgetary expenditure for social purposes had been severely constrained, led to mounting political tensions culminating in the unrest of May 1968, and the subsequent very large wage increases. 2/

1/ It was also enhanced by marked improvements in productivity in key industries, such as chemicals, automobiles, and electronics, and closer integration with the U.S. market, brought about by heavy direct investments by U.S. companies in Europe. These investments had been influenced by the wish to acquire production facilities behind the EEC external tariff barrier.

2/ The student unrest in Paris, which set off the nationwide strikes, was sparked by overcrowded classes and inadequate grants, coupled with growing resentment of the young at the heavy unemployment among the large numbers of new entrants to the labor force.

The French crisis served to reinforce inflationary pressures throughout Europe in several ways. Most obviously, it caused union leaders to be more aggressive in wage bargaining for fear of being supplanted by unofficial action, and it made employers and governments less inclined to resist wage claims, or demands for higher government spending, for fear of provoking similar political unrest and violence. At the same time, it drew public attention to widening disparities in real per capita income and to inadequacies in the social services; and rallied the forces supporting reforms, making electorates more demanding and politicians more inclined to propose major increases in social expenditure. Thus it contributed a powerful stimulus toward more expansionary budgets and increases in public expenditure as a share of GNP. In France and Italy especially, the events of May 1968 predisposed the authorities to highly accommodative demand management in the next several years. In France this took the form of permissive monetary policy, 1/ in Italy, of large and mounting public sector deficits.

In Germany, the first postwar experience of a severe recession led to the election in 1967, of a Social Democrat Government pledged to promote higher activity and to raise social expenditures. The extraordinarily strong demand for exports in 1968 coincided with sharply rising home demand and the first recourse to deficit financing since the war. The combined stimulus was quite excessive--the broadly defined money supply increasing by an unprecedented 17 1/2 per cent between the first quarter 1968 and first quarter 1969. The continuing boom, together with

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1/ See Pascal Salin and Georges Lane "Inflation in France" in Worldwide Inflation, op. cit. pp.550-51.

reactions to the French crisis, led to a wave of wildcat strikes in the autumn of 1969. The resulting large wage settlements substantially raised the level of German production costs (Chart VIII).

The German wage explosion in 1969 was associated with a marked change in pricing behavior. Real output could not keep up with nominal demand and industrial prices rose sharply, in contrast to earlier years when industry had raised prices only after wages and other costs increased. 1/ Rising prices and sharply increasing profits, together with the threat posed by unofficial strikes to the unions' control over collective bargaining, led to more aggressive attitudes, bringing to an end cooperation in the concerted action program 2/ and the union leaders' willingness to limit the scale of wage claims (first in support of the Adenauer Government's efforts to regain price stability--and then in solidarity with the new Government). In 1970 and 1971, wages rose by 15 and 12 per cent over the preceding year.

It would seem that the episode of highly inflationary demand conditions and loss of monetary control by the German authorities in 1968 was, in part, responsible for the change in wage and price behavior in Germany over the next several years. One must view this critical episode as the consequence both of the shift from excessively restrictive to excessively expansionary domestic demand policies in Germany, and of the impact of inflationary U.S. policies in 1967-68.

1/ See study by G. Fels (in Worldwide Inflation, p. 629).

2/ The concerted action procedure instituted in 1965 was designed to harmonize policy actions and the behavior of enterpreneurs and labor market participants. It took the form of regular conferences, chaired by the Minister of Economics and Finance, at which representatives of trade unions, employers' and producers associations, the central banks, and of the independent Expert Council on Economic Development met to discuss the general economic situation. (See Fels op. cit., 619.)

The marked rise in the level of costs and prices in the most competitive industrial center of Western Europe could not but act as an important easing of constraint on price increases and wage settlements in neighboring countries. In the context of strongly expansionary policies in the United States after 1969, large German wage settlements tended to induce claims for similar percentage increases in other countries; and the knowledge that German costs--a major constraint on competing industries in other European countries--had risen, weakened employers' resistance in the face of aggresive union bargaining and unofficial strikes.

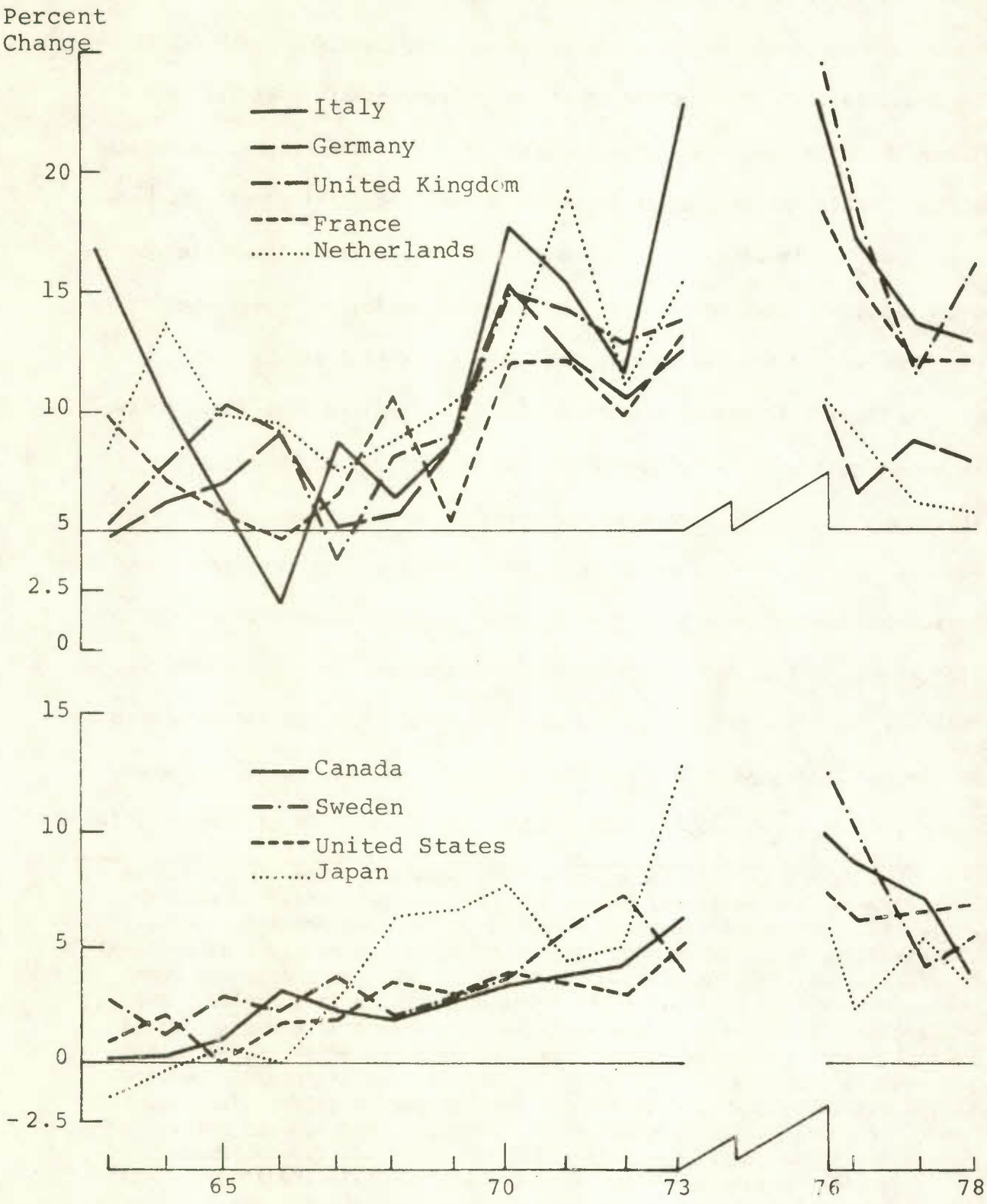
As Chart VIII shows, the steep rise in normalized unit labor costs in manufacturing 1/ in Germany from 1969 to 1970 was accompanied by strikingly similar increases in the United Kingdom, France, and Italy, and--one year later--in the Netherlands. Over the next few years much larger increases in normalized unit labor costs in Germany than before 1969 appear to have set the floor for increases in the other countries. This was in sharp contrast to the period 1963-69 when German costs were stable, or increased only slightly, in five of the six years, and when normalized unit labor costs were moving very differently in these countries.

1/ The change in unit labor costs is a measure of the change in the cost of wages and salaries, social security charges, etc. incurred by employers, per unit of real GNP produced in the manufacturing sector. The unadjusted unit labor costs series fluctuates strongly with cyclical changes in activity, because output tends to fall (or rise) more than employment or wage costs when the level of activity is changing. Normalized unit labor costs are calculated by dividing an index of actual average hourly compensation per worker by an index of estimated output per manhour assuming a normal level of capacity utilization in manufacturing was continuously maintained. (The method of calculating this series is described in Jacques Artus, "Measures of Potential Output in Manufacturing for Eight Countries 1955-78" IMF Staff Papers, March 1977.)

No observations are shown in the chart for 1974 and 1975 because the method of calculation makes the estimates for these years unreliable. The observations for 1976 to 1978 are not strictly comparable with those for the earlier years.

Chart VIII

Nine Countries: Increase in Normal Unit Labor Costs 1963-1978



The acceleration of wage increases in the United Kingdom in 1970 has generally been interpreted as a classic case of "pure" wage push 1/ or as an example of the tendency for wages to rebound after a period of incomes policy controls. It occurred with no preceding acceleration of consumer prices and when the pressure of demand for labor was low and falling. Wynne Godley attributed the spurt in wage increases to "a kind of backlash" due to "the holding down of pay increases of the main groups of public sector workers, by means of the incomes policy started in 1966. When this policy finally disintegrated, very large increases of almost unprecedented size were awarded to public sector groups that had fallen behind...." 2/ However, the catching up of wages and salaries in the public sector mainly occurred after 1970. 3/ During 1970 the gap between earnings in the private and the public sector was still widening as wages were rising rapidly in industry and in associated services such as commerce and road haulage. Over the 12 months to October 1970, average weekly earnings in manufacturing rose by 14 1/2 per cent, and hourly earnings rose even faster.

Aggressive wage bargaining was not simply a response to the ending of incomes controls, but represented a reaction to proposals for legislation limiting the unions' freedom of action and to the raising of purchase taxes and charges for social services at the same time as direct taxes on higher

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1/ For example, in his 1977 study, R. J. Gordon included a special dummy in the wage equation for the United Kingdom, "For the 1970 episode that has made wage push a byword among British economists." He concluded that the episode did not "represent any profound sociological phenomenon but simply an attempt to catch up for losses in real income during the preceding period of restraint." Op.cit., pp. 444-445.

2/ Worldwide Inflation, p. 456.

3/ The three very large wage awards cited by Wynne Godley as the manifestation of the catching-up process occurred in late 1970, in 1971 and in 1972. Ibid, p. 470.

incomes were reduced. External factors also contributed to the acceleration of wage increases because "more intense pressure for wage increases at the local and central level coincided with reduced resistance to wage increases that was due in part to the faster rise in prices of competing foreign manufactures. The 9 per cent rise in the price of imported manufactures during 1969 gave scope for a substantially faster rise in earnings than had occurred in 1968 or 1969." 1/

c. Causes of the disproportionate rise in nominal incomes outside the United States in 1969-70

The McCracken group of experts could find "no compelling explanation" for the series of "wage explosions" in 1968-69 period "other than the prior lag in growth of disposable incomes--the "conflicting shares" thesis--in combination with accommodating demand management." 2/ The account given here, however, would point to the very rapid expansion of nominal demand in the industrial world in 1967 before the wage explosions occurred, and the development of highly inflationary demand conditions in Germany in 1968 before strong wage pressures were encountered there, as the missing explanation for the widespread, almost synchronized, upward adjustment of wage levels in Western Europe.

1/ Braun "Wages in the United Kingdom: Has There Been a Shift in the Phillips Curve?" IMF Staff Papers, March 1971, p. 161. Chart 7 in that study suggests that variations in the movement of prices of imported manufactures had contributed to keep down the rate of wage increase in the late 1950's and early 1960's, and had a powerful effect in the opposite direction in 1968-71.

2/ McCracken Report pp. 50-51. Kaldor expressed a similar view in his Economic Journal article, though he noted that there was no fully satisfactory explanation either for why the wage explosion occurred at that particular time and not earlier--or for why the explosion should have occurred more or less simultaneously in so many different countries. He rejected the view that the explanation was to be found in the international transmission of the demand inflation in the United States associated with the Viet Nam war for reasons which are not very convincing.

Had it not been for the extraordinary surge in demand upon the "open" sectors of the industrial countries in 1968-69, unleashed by the policies adopted by the United States, Germany, and the United Kingdom, in 1967-68, it is difficult to see why factors such as "the arrival of the postwar generation to maturity, high employment expectations based on presumed government "full employment" guarantees, growing inflationary expectations based on extrapolations of recent experience and receding memories of unemployment," and "growing imperfections and rigidities in labor markets" 1/ should have had a sudden impact on wage developments over a short period of time.

Wage pressures in Europe were heightened by the unsettled political climate in some countries, notably France and Italy, and by changes in governments in Germany and the United Kingdom. But one may describe the underlying common cause of the wage explosions somewhat as follows. U.S. policies in 1967-68 create an unforeseen, sharp rise in world demand for industrial products. This external shock leads to increased activity, a faster rise in the cost of living, and sharply higher profits in the export and import-competing sectors of other industrial countries. Favorable wage bargaining conditions in certain industries produce a marked rise in relative earnings (through increasing overtime, easier setting of piece rates, accelerated wage drift, greater responsiveness to wage pressures on the shop floor, and higher negotiated settlements). The resulting disturbance to established wage contours 2/ then creates stronger pressures

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1/ Ibid.

2/ Fixed relationships between wage rates for different jobs or in different occupations are known as "wage contours" in institutional labor economics. For a statement of the view that "wage inflation stems mainly from disruptive shocks to established wage contours, not only from a scarcity of labor" see Michael J. Piore, "Unemployment and Inflation: An Alternative View." Challenge May/June 1978.

for wage increases in other industries and in the sheltered sectors producing goods and services sold (or utilized) almost exclusively in the country where they are produced (such as construction and most public services). Hence the general movement of wages is influenced, not only by the level of demand versus supply within each sector, but also by the tendency for a high rate of increase in one sector, due to exceptionally strong demand conditions there, to spread to other sectors.

The sharper the relative rise in earnings in some major industries or occupations, the greater the tendency for the dissemination of higher wage increases to other sectors. The occurrence of exceptionally strong demand conditions in certain industries, when the general level of demand and activity is quite restrained (as in most Western European countries in the late sixties), will tend to push up the average rate of wage increase above what might otherwise have been expected from the general level of demand and supply across all sectors of the economy.

This view of wage behavior is of course not consistent with the monetarist assertion that the general level of prices is independent of changes in relative prices--at least in so far as that proposition relates to a period of a few years.

2. Why the sharp acceleration of money growth in 1971-72 occurred mainly outside the United States

By 1970, the "creeping inflation" of the early 1960's had been replaced by a rapid increase of domestic costs and prices in the industrial world that persisted in the face of a sharp downturn in the general level of activity. This first drastic worsening of the aggregate Phillips curve from 1968 to 1970, illustrated in Chart 15 of the McCracken Report, was the

outcome of disparate developments in North America and the other industrial countries. The United States and Canada experienced a marked rise in unemployment without a moderation of inflation; the other countries, a sharp acceleration of inflation with a slight rise in unemployment (see Charts I and VII). In these circumstances there was bound to be a divergence of policy goals, with a reduction of unemployment having first priority in North America--and the restraint or containment of inflation commanding more attention in most of the other countries; especially in Germany and Japan, where the level of unemployment was very low and the rate of inflation had increased dramatically in 1970.

However, if the United States adopted strongly expansionary policies, including a policy of preventing nominal interest rates from rising; and if other countries, now experiencing more rapid increases in the level of costs and prices than the United States, were determined to prevent their currencies from appreciating in the face of heavy capital inflows, the stage was set for an acceleration of monetary expansion outside the United States.

a. The impact of the unforeseen acceleration of wage inflation upon monetary expansion

Under fixed exchange rates and integrated capital markets, a policy of preventing nominal interest rates from rising in a major financial center, coinciding with an unexpected increase in the rate of wage and price inflation in another country with a strong current account position, will cause the growth of money supply in the latter country to be more than merely accommodative of the going rate of inflation unless the monetary authority is able and willing to sterilize the monetary effects of capital inflows. Otherwise the effect of capital inflows in keeping down nominal interest rates, and

the resultant decline in real interest rates, will induce increased borrowing to finance purchases of real estate, inventories, etc. Rising spending would push up prices for such assets and "auction market" goods, notably primary commodities. Such price increases feed through to the cost of living and wage increases, generating a further acceleration of the overall rate of inflation. 1/ Such an inflationary spiral was set in motion when the unforeseen rapid rise in wages and salaries and in production costs caused rising demand for credit outside the United States, while low interest rates in the United States and the expectation that the dollar would be devalued, made it difficult to secure a marked rise in nominal interest rates. Even after the adjustment of exchange rates in 1971, other industrial countries were still hampered in raising interest rates, since they were not prepared to provoke a further appreciation of their currencies against the dollar. 2/

U.S. monetary policy in the early 1970's had powerful inflationary consequences outside the United States, because the authorities in strong currency countries were unable to enforce a large interest rate differential without precipitating an appreciation of the exchange rate, while in other countries, such as the United Kingdom and Canada, governments anxious to promote a faster

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1/ See Section I.3.

2/ In fact adjustment of exchange rates at the Smithsonian conference in December 1971 had been limited by governments' fears of the effects of an increase in U.S. competitiveness upon their export, and import competing industries. (See Braun, Economic Council of Canada Discussion Paper 132, pp.26-27.) In Germany's case, the effort to limit the appreciation of the D-mark vis-a-vis the dollar was partly motivated by the wish to avoid changes in exchange rates within the European Economic Community, because the operation of the Common Agricultural Policy was geared to the maintenance of fixed exchange rates. As a result the D-mark and the Dutch guilder were in effect linked to the weaker EEC currencies. Because of France's predominant position as the major agricultural producer, the dollar exchange rates set for the D-mark and guilder under the Smithsonian Agreement were conditioned by the fact that little appreciation of the franc vis-a-vis the dollar was called for, or was desired, by the French authorities.

rate of growth and a reversal of rising unemployment, were relieved, by capital inflows, of the balance of payments constraint. 1/

Hence, "The mistakes which led to the excessive monetary expansion of 1971-72 were in part related to the breakdown of the adjustable peg system of exchange rates". The McCracken group considered that policy errors "also arose from a failure to appreciate the full implications of the explosive rise in inflationary expectations particularly as regards the interpretation of movements in nominal interest rates ...." 2/ However, it would seem that low nominal, and often negative, real interest rates in relation to the actual ongoing rate of increase in costs, were a sufficient explanation for the rapid credit expansions and the acceleration of inflation they provoked.

b. The influence of progressive income taxes under rapid inflation

A second major factor tending to reinforce and perpetuate cost pressures in the early 1970's was the effect of progressive income taxes in shifting real resources to the public sector when nominal incomes were rising fast.

1/ In strong currency countries, if the monetary authority were to succeed in limiting money growth and raising nominal interest rates by open market sales of securities, so maintaining positive real interest rates for domestic borrowers, nominal demand for credit would be smaller than in the absence of such stabilization measures, but the incentive to borrow in the United States rather than the home capital market would be stronger. The lower rate of credit expansion and level of activity, together with any resulting improvement in price performance, would tend to strengthen the balance of payments on current account and to promote expectations of an appreciation. Even without such expectations, the emergence of a marked interest rate differential (sufficient to counterbalance the going faster rate of cost inflation outside the United States) could make it profitable to borrow in the United States for the purchase of official securities being issued for sterilization purposes, thereby inducing large capital flows. Such flows would promote expectations of appreciation, strengthening the inducement for such transactions and forcing an appreciation.

2/ McCracken Report, p. 20. Italics added.

In countries with progressive income taxes, involving rising tax rates over a broad range of incomes, inflation causes unplanned increases in the share of personal and corporate income taken in taxes. If tax rates are not indexed, real tax revenue will rise more than in proportion to real national income, and real tax receipts may rise even if real income does not: fiscal policy will have a deflationary impact on the aggregate level of real demand unless the share of public expenditure in real GNP increases. This process is commonly referred to as "fiscal drag" because it implies that the increase in disposable private income is slowed by rising taxes if the public sector does not increase its spending in line with the increase in tax receipts.

"Fiscal drag" could have automatic stabilizing effects in countering unforeseen cost inflation, if the authorities allowed the unexpected rise in revenue to promote a more restrictive budgetary stance than had been planned. In the early to mid-1970's, however, governments were under strong political pressure to restore a high level of employment, and to provide improved social benefits such as medical insurance, pensions, and unemployment compensation. Thus progressive tax systems served to ensure that the volume of public spending rose as a consequence of the faster rise in nominal incomes.

Some idea of the scale of the shift of resources that could be involved is given by the rise in total personal income tax receipts in Canada from the equivalent of under one sixth, to more than one quarter, of total wages and salaries between 1965 and 1975; the rise being largely the result of the progressivity of the tax structure, as there were few increases in tax rates over the period. 1/ The rise in revenue preceding the rise in

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1/ D. A. Wilton, Wage Inflation in Canada (Centre for the Study of Inflation and Productivity), Economic Council of Canada, Discussion Paper No. 136, pp. 127-28.

expenditure during the later 1960's is strikingly illustrated in Chart IX, reproduced from the Anti-Inflation Board's 1979 report. 1/

While the "tax push" effects of progressive taxes, in inducing larger wage claims to compensate for increasing tax deductions, have received considerable attention in Canada and elsewhere, 2/ far less attention has been paid to the demand-side effects of the automatic increases in tax revenue, in inducing a more permissive attitude to increases in public expenditure and in facilitating the expansion of social programs, by obviating the need to legislate higher taxes. 3/

Coupled with the removal of the balance of payments constraint by the large U.S. deficits of the early 1970's, buoyant revenues from progressive taxes and rising real estate tax assessments were an important factor in promoting the rapid growth of public expenditure. That rapid growth, however, contributed to sharpen cost pressures throughout the economy. Rapidly rising revenues, like a high profit situation in private business, encouraged aggressive wage bargaining and weakened constraint on increases in wages, salaries and pensions in the public sector. 4/ In some cases--notably in Canada, Sweden, and the United Kingdom--the easy financial position of the public authorities was a factor in very large wage awards

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1/ Inflation and Public Policy, (Ottawa, 1979.) Chart 2.4, p.41.

2/ See Anti-Inflation Board, op. cit., p. 3 and pp. 39-41; D. A. Wilton Wage Inflation in Canada, pp. 122-130; Y. Kotowitz, The Effect of Direct Taxes on Wages (Anti-Inflation Board, Ottawa), Aaron; Henry J. (edit), Inflation and the Income Tax, The Brookings Institution, 1975; OECD, The Adjustment of Personal Income Taxes for Inflation, 1976.

3/ The Anti-Inflation Board, for example, does not refer to this issue in its 1979 report.

4/ For an excellent account of the factors tending to make wages in the public sector in Canada more responsive to inflationary conditions than wages in the private sector see Jean Michel Cousineau and Robert Lacroix, Wage Determination in Major Collective Agreements in the Private and Public Sectors, Economic Council of Canada 1979, pp. 45-47.

made to public sector employees to catch up with the earlier increases in industrial wages (for example, the three awards in the United Kingdom cited earlier, which resulted in increases of 17, 20, and 25 per cent for local authority workers, electrical supply workers, and the miners in 1970, 1971 and 1972). In Canada annual wage increases of 19-20 per cent were granted under collective settlements covering semi-public enterprises in 1974 and 1975 and those for provincial employees in 1975, when awards in manufacturing averaged 13-14 per cent. 1/ Large wage increases in the public sector then set the pattern for wage increases in the private sector.

The rapid buildup of new services, such as medicare or pension schemes, was often associated with stronger organization of public sector employees for wage bargaining purposes and with very marked increases in relative wages and salaries. Lax control over pricing in public sector purchases from the private sector directly strengthened cost pressures in important segments of the private economy, such as construction, heavy engineering and defence industries; and the confident belief that the volume of public purchases and employment would not be affected by their rising cost, influenced the attitudes of employers and labor in the private sector, coloring labor's view of the risk of unemployment and employers' views of the need to prevent costs increasing, or indeed of the possibility of doing so.

In a country with an unindexed progressive tax system, there will be a potent interplay between the effects of very low or negative interest rates and the effect of inflation in promoting a shift of real resources

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1/ See Economic Council of Canada, The Inflation Dilemma, Thirteenth Annual Review, p.28.

CHART IX

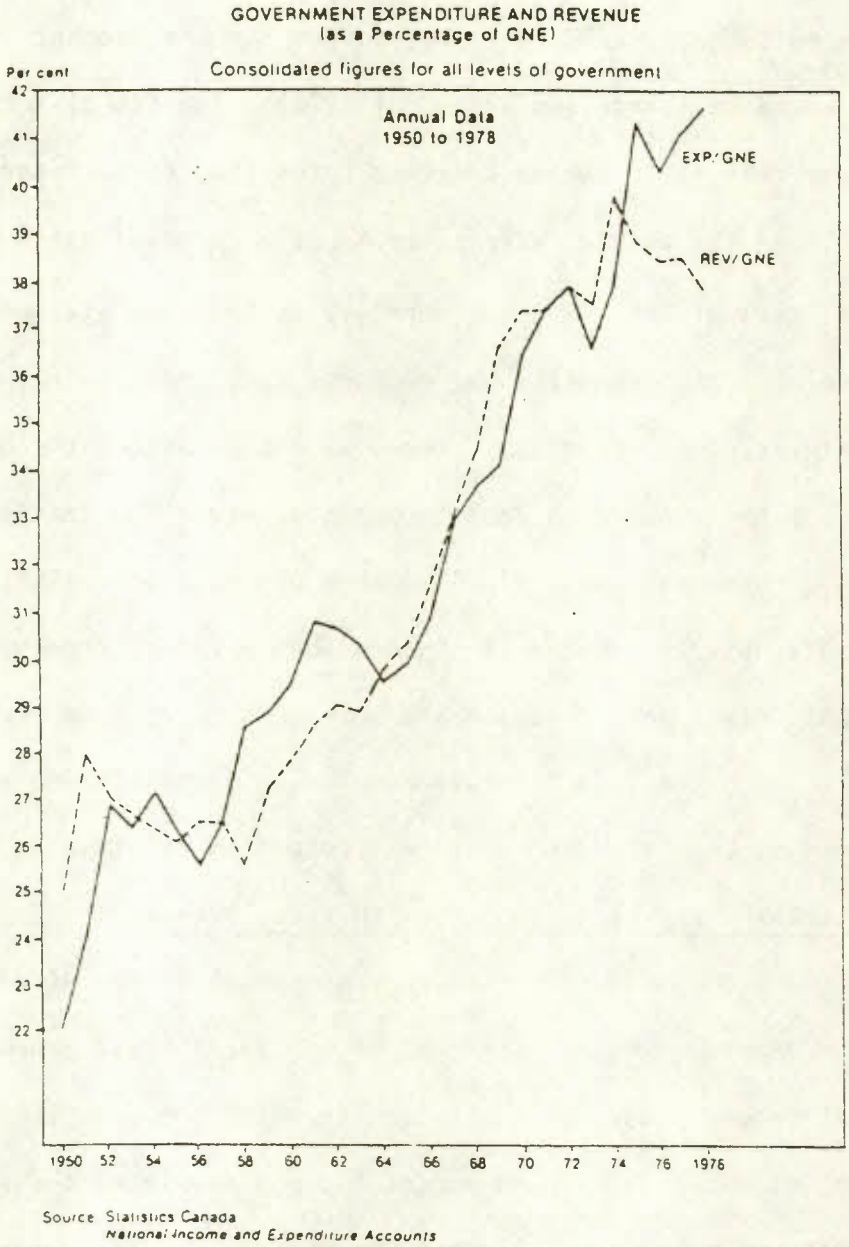

Chart reproduced from Inflation and Public Policy, Anti-Inflation Board 1979, p. 41.

to the public sector. 1/ The sound policy is to correct the increase in real tax rates due to inflation (as Canada did in 1974), and to allow interest rates to be determined by market forces (as the Bank of Canada stated would be its policy after May 1975). But fiscal authorities are keenly aware that it is easier to lower taxes than to increase them; governments welcome the initial effects of keeping interest rates down in raising the level of activity; and monetary authorities are concerned with objectives such as preventing the exchange rate from rising, as well as with maintaining price stability. Moreover, in practice, the outcome strictly applying these rules may not be satisfactory. The inevitable lags in indexing taxes may cause problems when the rate of inflation is brought down very sharply. Under flexible exchange rates, freely determined, but highly divergent interest rate movements in different countries may give rise to exchange rate "overshooting" with destabilizing effects upon prices in some countries and upon real output in others.

c. Differing exposure of countries to these effects

Some countries were far more exposed than others to the effects which have been described here. The risk of capital inflows provoking a domestic credit boom depended on the extent to which the domestic banking system and capital market had ready access to, and developed institutional links for, foreign borrowing. In certain countries (notably Japan, Sweden, and to some extent France) such access was traditionally limited; others,

1/ If nominal interest rates are kept down for any reason (whether for balance of payments, or domestic policy, considerations, such as to avoid "crowding out"of private investment, to keep down the cost of the public debt, or to protect the equity of national debt holders or the value of the banks' reserve assets), rapid credit expansion and the ensuing inflation will induce a shift of real resources to the public sector, weakening control over public spending.

such as Germany, took steps to limit foreign borrowing by the banking system at this period. Canada and the United Kingdom were particularly exposed; Canada by reason of its close financial ties with the United States, and the United Kingdom because of the importance of London as an international financial center. Canada and the United Kingdom were also particularly liable to "fiscal drag" and to a tendency for reduced constraint on public spending to perpetuate cost inflation once it got started, as were the Scandinavian countries and the Netherlands.

In the United Kingdom, these adverse tendencies were overshadowed and compounded by the consequences of the sweeping relaxation of restrictions on the banking system. For many years, the growth of credit to the private sector had been partially dammed by increasing quantitative restrictions on the banking system and the rationing of bank credit. This had led to growing importance of non-bank channels of finance not subject to the restrictions, and to mounting pressure from the banks for their relaxation. In the context of the exceptionally favorable balance of payments position in 1971, many of the controls were abolished, in the interest of achieving a more competitive banking system; and reliance was placed on cred t control by open market operations, more flexible interest rates, and the introduction of uniform reserve requirements for the whole financial sector. These far-reaching changes, which enabled the banks to attract funds from other markets, such as local authorities and inter-company lending, had the immediate effect of making it difficult for the central bank to control the expansion of credit, or even to evaluate how excessive an expansion was developing. As a result, in 1972 the United Kingdom experienced the most rapid monetary expansion of any of the nine

countries during the sixties and seventies, and suffered a buildup of inflationary pressures that was to have a dominant influence on the economy for at least the next four years.

d. The legacy of the early 1970's

The adverse combination of reduced real output growth, rising unemployment and continuing rapid inflation in the industrial countries after 1973 stemmed from efforts to curb, or to live with, the consequences of the excessively inflationary policies pursued in 1972-73. Almost all of the industrial countries studied here bear some responsibility for the emergence of rampant inflation in 1973-74, either because--like the United States, the United Kingdom and Italy--and to a lesser extent Canada, the authorities followed excessively expansionary policies in pursuit of higher real output growth and reduced unemployment, or because--like Japan and Germany--the authorities sought to maintain their traditional reliance on export-led growth under a favorable exchange rate, in a highly inflationary world environment.

Thus one can identify two interrelated causes in which the stagflationary experience of the mid to late seventies had its roots, both reflected in the acceleration of year over year money growth in the industrial world. One was the failure to moderate the average rate of demand expansion after 1970; the other was the failure to allow the U.S. dollar to depreciate fully before 1973. For this the major responsibility rests with the authorities in the surplus countries, Germany and Japan. The effort to resist the upward readjustment of their exchange rates exposed these economies to an intensifying impact from expansionary policies elsewhere, and caused a sharpening conflict of national priorities, culminating in the implementation of extraordinarily discordant policies in 1973: when Germany and

Japan slammed on the brakes while highly expansionary policies were maintained in North America, the United Kingdom, and Italy.

Some of the factors underlying the sharply differing policy responses in 1973 are evident from Table I. Germany and Japan had experienced a faster rise in normalized unit labor costs from 1971 to 1972 than the United States, with some further reduction of their cost advantage, already lessened by the 1971 devaluation of the dollar. At the same time their monetary expansion rates were raised by heavy reserve accumulation. While the governments of the United States and the United Kingdom were determined to continue the dash for growth--under highly expansionary policies and, if necessary, depreciating exchange rates, relying on mandatory price and wage controls to curb and delay the rise in domestic costs and prices--the authorities in Germany and Japan, mindful of their experience in 1969/70, had a strong inducement to adopt a restrictive monetary policy and let the exchange rate adjust. The combined rate of credit expansion in Japan and Germany was cut by one third from 1972 to 1973, while the United States experienced only a slight deceleration of money growth brought about by very large capital outflows. Canada, Italy and Sweden experienced a sharp acceleration, due to faster domestic credit expansion, and the inordinate rate of credit expansion continued in the United Kingdom.

It would have been far preferable if the deceleration of demand expansion in the industrial countries had been general in 1973. The extreme discordance of national policies led to very sharp changes in exchange rates. These had the effect of intensifying both the upward pressure on costs and prices in the expansionary countries and the impact of deflationary policies on the level of industrial output and employment in

Table I. Monetary Expansion Rates and Changes in Normalized Unit Labor Costs 1/ 1972, 1973

(Percentages)

	1972 ΔM(DCE) 2/	1973 ΔM(DCE) 2/	Change	ΔNULC 1972	ΔNULC 1973
United States	12.3 (12.8)	11.2 (13.8)	-1.1 (1.0)	3.0	5.0
Germany	15.4 (13.5)	11.4 (9.2)	-4.0 (-4.3)	5.5	7.6
Japan	24.7 (22.9)	16.8 (16.6)	-7.9 (-6.3)	4.6	12.7
France	18.6 (17.7)	15.0 (13.4)	-3.6 (-4.3)	5.0	8.3
Canada	14.7 (15.3)	20.8 (20.7)	6.1 (5.4)	4.2	6.3
Sweden	12.7 (9.1)	15.2 (10.1)	2.5 (1.0)	7.3	3.9
United Kingdom	27.9 (32.7)	27.5 (29.2)	-0.4 (-3.5)	8.0	8.8
Italy	17.9 (19.1)	23.5 (26.9)	5.6 (7.8)	6.5	18.0

Sources: As for Chart VI.
1/ Normalized unit labor cost (NULC) is defined on p. 30, footnote 1.
2/ Change in M_2. Domestic credit expansion in brackets.

Germany and Japan. Furthermore, the sharp depreciation of the U.S. dollar was a major factor in precipitating the huge increase in oil prices at the end of 1973, which compounded the pre-existing tendencies to stagflation in 1974 due to the slower rate of monetary expansion in 1973.

Had the yen and the deutsche mark been allowed to float freely vis-a-vis the dollar throughout 1971 and 1972, the United States would have experienced a stronger impetus to real growth, investment and employment--especially in the open industrial sector, which was actually affected by increasing foreign competition; but it would also have been more fully exposed to the inflationary consequences of its policies in inducing exchange rate depreciation and domestic price and cost increases. The U.S authorities would have come under stronger pressure to tighten monetary policy, while Japan and Germany would not have experienced the intense export boom and the accelerating cost pressures that compelled the adoption of sharply restrictive policies in 1973.

Other countries would have been constrained from pursuing such expansionary policies, or would have been better insulated from external inflationary pressures. The earlier implementation of freely floating exchange rates for the major strong currencies, and the probable pegging of other strong currencies such as the guilder and the Swedish kronor on the deutsche mark, would have obviated the huge capital outflows from the United States to other capital markets, and the unusually favorable current account balances experienced by many countries. The United Kingdom and Italy--the two countries which pursued the most flagrantly inflationary policies in 1972-73--would not have been presented with the opportunity for expansion offered by an exceptionally easy external position. In Canada's case, tighter policies in the United States would have mitigated the external inflationary pressures on the Canadian economy occasioned by intense demand, and much higher prices, for its exports of food and primary products; and the development of boom conditions in 1973, that gave rise to persisting pressures on costs in 1974-75, could probably have been avoided.

France and Italy would have been required to accept an earlier adjustment of their exchange rates vis-a-vis the deutsche mark and the dollar. In France at least the authorities would then have come under greater pressure to curb domestic credit expansion in order to realize the objective of restabilizing the exchange rate vis-a-vis the deutsche mark. Smaller countries, such as Austria, Belgium, the Netherlands, Norway, and Sweden, which wished to maintain the value of their currencies vis-a-vis the deutsche mark, would have been obliged to follow broadly similar monetary policy to that pursued by Germany--in respect of domestic credit and interest rates--but would have been able to do so without finding their policies frustrated by the monetary consequences of balance of payments surpluses.

3. The experience under more flexible exchange rates: Some background notes for the interpretation of recent history

a. The crisis years 1973-75 and subsequent developments

With the greater independence of national demand management under flexible exchange rates, it becomes much more difficult to derive a general picture of economic developments in the industrial countries. The problems facing national authorities in recent years have differed radically owing to the legacy of widely differing rates of inflation and strength of cost pressures left behind by the disparate policies and exchange rate experience of 1973-75. The D-mark and the yen appreciated sharply in 1973, while the U.S. and Canadian dollar, lira and pound fell (the fall in the pound commencing in 1972). Italy and the United Kingdom experienced a continuing depreciation through 1976-although the fall of the pound was interrupted for about a year from mid-1973 to mid-1974 (Chart X). 1/ The appreciation of the yen was reversed after mid-1974, 2/ and the U.S. and Canadian dollars strengthened during 1975.

1/ Chart X, reproduced from International Monetary Fund's Annual Report 1977, p. 31, shows movements in effective exchange rates, and changes in real exchange rates as compared with first half of 1973. The indices in the chart are based on data for 14 industrial countries.

(i) The effective exchange rate shows the weighted average change in the value of the country's currency in terms of the 13 other countries' currencies; the weights corresponding to shares in the country's imports and exports of manufactures from the group.

(ii) The unadjusted wholesale price series shows the change in the relative levels of wholesale prices for manufactures in domestic currencies in the country, and in the other 13 countries, weighted as before.

(iii) The adjusted relative wholesale price series (that is the real exchange rates measured in terms of wholesale prices for manufactures) shows the series in (ii) adjusted for the change in the effective exchange rate.

2/ It should be noticed that Japan and Italy secured a consistent and marked lowering of the real exchange rate as compared with that of the first half of 1973. Although there are important institutional factors involved, it is not coincidental that these are the only countries which do not show a very marked rise in unemployment after 1973. The contrast between the development of the real exchange rate for Italy and that of the United Kingdom--which

Their relative rates of monetary expansion in 1973 largely set the pattern for countries' experience of inflation over the next several years. The three largest countries had high rates of money growth--not however, likely to give rise to double-digit inflation under normal conditions. France and Sweden, and most of the smaller industrial countries had rates of monetary expansion of the order of 15 per cent, while those of Canada, Italy, and the United Kingdom exceeded 20 per cent per annum. In 1974 the last group experienced rates of inflation, as measured by changes in GNP deflators of 15-18 per cent, against about 12 per cent for the second group, and less than 10 per cent for the United States and Germany. The highest rate of inflation was however experienced in Japan, where wages rose very sharply at the end of 1973 under the influence of the export boom, and which was more severely affected by the oil crisis than any of the other industrial countries.

The three largest countries all enforced sharp credit restraint in 1973 or 1974--the United States followed Germany and Japan in applying two years of stringent monetary policy in 1974 and 1975--and they all suffered a decline in real GNP as the cost of curbing the acceleration of inflation. Unemployment rose steeply in Germany and the United States between 1973 and 1975. The loss of real output was actually most marked in Japan, when its higher previous growth trend is taken into account; but the rise in recorded unemployment was relatively moderate, partly for

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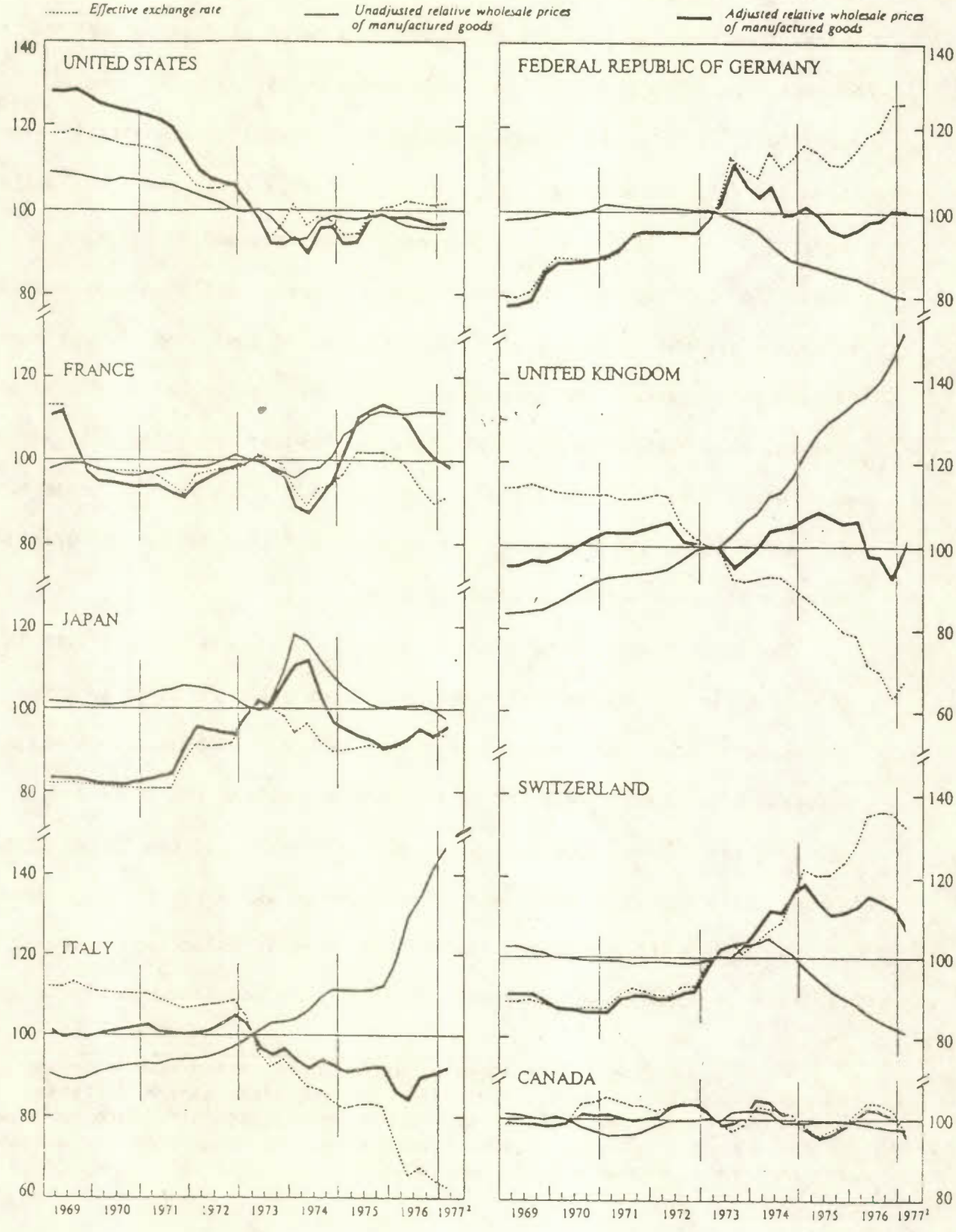
2/ (continued from p. 47) shows a marked appreciation and worsening of competitiveness over most of 1974-76--is as striking as the different unemployment experience of the two countries. Canada's failure to secure either a needed lowering of the effective real exchange rate, or a stable exchange rate, should also be noticed.

CHART X

Effective Exchange Rates and Relative Prices, 1969–76

Quarterly indices, first half 1973 = 100)[1]



[1] These indices, including those used in the calculation of the effective exchange rates, are based on data for the 14 industrial countries.

[2] First quarter partially estimated by the Fund staff.

Reproduced from Annual Report 1977, International Monetary Fund, p. 31.

institutional reasons, 1/ partly because real output growth was resumed under the stimulus of a renewed strengthening of export competitiveness. Drastic monetary stringency in 1974-brought about by restraining domestic credit in the face of sharply higher wages and prices--was reflected in small wage increases in 1975; the substantial depreciation of the exchange rate in the course of 1974 (induced by oil-price related balance of payments deficits) more than offset the effect of the large wage increases in 1974.

Italy and the United Kingdom, the countries with the most excessively expansionary policies in 1973, did worst in 1974-75, experiencing a very marked acceleration of inflation and depreciation of the exchange rate over the next two years--with little or no real growth--2/ indeed a substantial decline in the United Kingdom. The disastrous performance of the U.K. economy in 1974-75 was in large part a consequence of the inevitable reversal of temporary gains in 1972-73, achieved by the combination of rapid credit expansion, a depreciating exchange rate, and mandatory curbs on price and wage increases. This produced a wholly exceptional (6.1 per cent) growth of real output and a moderate rate of price and cost increases in 1973. A similar combination, in less extreme form, was realized in the United States during 1973 to mid-1974--with curbs bearing especially on wages at the end of the period.

1/ In Japan open unemployment is kept down by the closer attachment of wage earners to particular enterprises than in other countries--and the tendency for large enterprises to retain workers even in times of low activity; and by the large-scale withdrawal of women from the labour force when demand for labour weakens.

2/ In Italy a 4 per cent rise in real GNP in 1974 was followed by a 3.5 per cent decline in 1975.

After restraining credit in 1973, France relaxed its policies in 1974 to accommodate the effects of the oil price increase. The other smaller countries covered here (and indeed nearly all the smaller industrial countries) also followed accommodative policies in 1974. Real output continued to rise in France, Sweden, and Canada, at annual rates ranging from 2.8 to 4.2 per cent.

In 1975, the United States and the United Kingdom maintained a highly restrictive monetary policy, the rate of increase in labor costs remaining much higher than before 1973. Real output again declined markedly in both countries, and scarcely rose in France, Sweden, and Canada and most of the smaller industrial economies. The widespread slowdown among Germany's neighbors, largely influenced by the earlier German policies of stringent restraint, now contributed to a marked decline in real output in Germany, that had hitherto been avoided by continued export growth. Despite a moderate easing of restraint in 1975, the slackening of export markets and the lagged effects upon industrial investment of the rise in relative labor costs due to appreciation of the D-mark, combined to reduce German real output by 2 per cent.

Declining, or stagnating, real output and increasing unemployment in 1975, 1/ led to a marked deceleration of the rise in normalized unit labor costs in the European countries and Japan in 1976, and to a less marked slowing in the United States and Canada. Although rates of domestic credit expansion were somewhat further reduced in 1976 in most countries,

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1/ See Chart VII. Italy alone experienced a slight increase in unemployment after 1973. While this outcome was aided by the lowering of real exchange rate, it was principally due to a rapid development of home employment on piecework and of small family businesses, encouraged by the profitable opportunities for evading taxes and social security charges, minimum wages, and union dues.

there was a general easing of monetary stringency, both because the slower rise in costs contributed to an easing, and because of the more expansionary policies pursued in North America and the United Kingdom. Real output rose by about 5 per cent or more in all the major countries except the United Kingdom and Sweden which experienced smaller increases.

The resumption of rapid real growth was followed by a quite marked acceleration of the rise in normalized unit labor costs in Germany and Japan in 1977, and a slight acceleration in the United States, but elsewhere the deceleration of labor costs continued. However, despite renewed real growth, unemployment was not reduced except in the United States; and the United States was the only country in which unemployment was significantly below its 1970's peak in 1978.

Once again there was a widening divergence of policies between the United States and Germany and Japan in 1977, as the U.S. rate of money growth continued to accelerate, while the German and Japanese authorities, and those of the United Kingdom, Canada, and Italy, reduced their rates of monetary expansion. As a result the U.S. dollar began to depreciate in 1977 and continued to fall markedly through most of 1978. Tighter policies led to a marked slowing of real growth in the industrial countries other than the United States, in 1977, and had the effect of somewhat reducing the rate of labor cost increase in 1978--more especially in Canada and Japan, and to a smaller extent in Germany and Italy. But in the United Kingdom, where the stiffening of credit restraint was a precautionary measure in anticipation of the ending of the unions' support for incomes policy, there was a renewed sharp increase in wage inflation.

Six years after 1973, the rate of domestic price inflation, as measured by the change in normalized unit labor cost or in the GNP deflator, was still above or approaching 10 per cent per annum in the United States, Italy, the United Kingdom, Canada, and France. Two countries, the United States and Italy, had managed to return to, or maintain, about the same unemployment rate as in the early 1960's by highly expansionary policies involving exchange rate depreciation. Others, in particular the United Kingdom and Canada, had experienced a very steep and continuing rise in unemployment. Among the seven major industrial countries only Germany and Japan had succeeded in restoring moderate rates of inflation. But this had been associated with a very marked slowing of the trend growth of real output in Japan and with a marked increase in unemployment in Germany and in neighboring countries, due to the return home of about a million foreign workers from Germany in the mid-1970's.

b. Were policies excessively deflationary in 1974-75?

Could the industrial countries have avoided the experience of two years of no real output growth in 1974-75, involving a loss of some 9-10 per cent of total annual income, and a much more severe reduction in real investment--which implied a pronounced aging of the capital stock and loss of technical innovations and productivity growth normally associated with replacement of capital? There are many economists who believe so.

It was clearly desirable that the three countries with excessive rates of credit expansion in 1973 (Canada, Italy, and the United Kingdom) 1/ should bring down their money growth rates. The question basically is whether the authorities in the three largest countries, and more particularly Germany and the United States, should not have reacted to the special conditions

1/ It is arguable however that the reduction by almost one third in the U.K. case was excessive, given other circumstances prevailing at the time.

created by the oil price increase by maintaining or slightly reducing, instead of sharply cutting, their rate of credit expansion in 1974. The question is less relevant for Japan, since Japan was faced with an explosive inflationary situation and problems of financing oil supplies of a totally different order from those in the other two countries. Among the other countries France in fact followed such an accommodative policy 1/ and did not suffer a very drastic worsening of its inflation rate in 1974-75 compared to that in the United States (Chart I), in spite of the sharp depreciation of the franc between 1973 and 1974.

(1) U.S. policies

A case can be made that the setting for U.S. policies in the later 1970's would have been more propitious if, in early 1974 the Federal Reserve had deliberately allowed a one-time increase in the money supply proportionate to the extra rise in the value of transactions occasioned by the increase in energy prices; and had thereafter reduced the rate of expansion and maintained a steady growth compatible with rising real output under moderate inflation. 2/ The price level would have risen--but not necessarily much more than it actually did in 1974, provided that the Federal Reserve told the public exactly what it was doing.

1/ In Sweden, on the other hand, the authorities over-reacted, pursuing extraordinarily expansionary fiscal and monetary policies in 1974, with the aim of maintaining the level of employment until higher growth rates were restored in its export markets. As a result Sweden was the only major industrial country to experience a marked acceleration of labor costs in 1975.

1/ This argument was advanced by James Pierce in an article in Fortune, March 27, 1978, pp. 151-154. In his view "the Fed had always ignored Friedman's advice (to stick to a fixed rate of money growth) preferring to adjust the money supply according to its judgment of what the economy needed. Then along came 1974, which was the one time in the postwar period when it could be theoretically and empirically demonstrated that the Fed should have done some tinkering. Unfortunately, the Fed chose that occasion to turn Friedmanesque and cling to a fixed target. As a result it contributed to the worst recession since the thirties."

Such a policy might have involved some increase in the rate of monetary growth for the year 1974 as compared with that of 1973; but it would have avoided the drastic stringency that developed at the end of 1974, as a result of sharply increased inflation (increasing the demand for nominal money balances) and reduced credit expansion (reducing the supply). The consequent reduction in real money balances and abnormally high interest rates held down consumer and investment spending in 1975. As declining spending and rising unemployment encouraged expectations of reduced inflation, real interest rates were perceived by borrowers to be increasing during 1975. The expectation that high nominal interest rates would fall with declining activity, intensified their immediate impact in holding down borrowing for financing consumer durables, housing, inventories, and business fixed investment, resulting in declining real output for the second year in succession, and the extraordinarily sharp rise in unemployment in 1975 (Chart VII).

These developments had at least three major consequences, the most obvious being the election in 1976 of a new administration and a congress determined to promote a higher level of activity and employment. Secondly, the stage was set for an exceptional recovery in real output under low inflation in 1976, which tended to encourage undue optimism about the feasibility of raising employment and securing rapid real output growth by expansionary budgetary and monetary policies without causing accelerating inflation. Thirdly, the experience of drastic monetary stringency and extremely high interest rates provoked major changes in the demand for

money balances. The changes included shifts, from non-interest bearing money to interest bearing assets, and out of monetary assets such as savings deposits into higher yield assets not included in the monetary aggregates; and also the development of money substitutes and financial techniques economizing on the use of cash and bank deposits. 1/ These changes--which upset the previously rather stable relationship between narrow money (cash and bank deposits) and the GNP--made it difficult for the Federal Reserve or the commentators informing public opinion to assess the consequences of the Fed's actions after 1975. 2/ The changes underlie the alteration in the relation between the rate of increase in broad money and the rate of increase in nominal GNP shown in Chart V. 3/

The slowing of inflation that might have been expected in 1975, as a response to the much slower rise in nominal expenditure in 1974, was delayed both by the continued pass through into prices and wages of the effects of the oil price increase, and more particularly by a very sharp rise in agricultural prices due to unfavorable supply factors both in the United States and abroad. Inflation moderated in 1976 when these factors no longer applied and price pressures were also eased by a marked appreciation of the dollar at the end of 1975. Early in 1976, nominal interest rates fell sharply under the influence of the lower

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1/ See Sanford Rose "Why the Fed is a Flop at Managing Money." Fortune, October 23, 1978, especially pp. 60-64.

2/ "Beginning in late 1974, the velocity of money--the ratio of GNP to M_1--began to rise sharply and unpredictably for reasons that no one has yet fully explained. Because of the aberrant behavior of velocity, a greater increase in M-1 led to a much larger increase in economic activity than anyone had previous expected." Ibid.

3/ See Section I, p. 13.

demand for money resulting from a lower inflation and the reduced activity, together with a moderate relaxation of restraint by the Fed. Nominal expenditure then rose very rapidly as the lower interest rates induced rising spending on consumer durables, rebuilding inventories, and housing starts, including spending which had been postponed from 1975.

The extremely favorable development of real output and prices in 1976, and the policy objectives of the new administration, persuaded the Federal Reserve to adopt a permissive attitude to money growth in 1977 aimed at preventing interest rates from rising. However, inflationary pressures were strengthening as the exceptional increase in real output could not be maintained; and as faster monetary expansion, coinciding with the tightening of policies in other industrial countries, led to the depreciation of the dollar. Continuing accommodative monetary policy in 1978 and very large current account deficits resulted in the long slide of the U.S dollar, that reinforced the tendencies for an acceleration of inflation in the United States, and once again contributed to an OPEC decision to raise the price of oil very sharply.

Excessively restrictive policies tend to produce an excessive reaction in the opposite direction. It is not fanciful to suggest that it would have proved easier to avoid a reacceleration of inflation in the United States in the late 1970's if the extreme monetary stringency of late 1974 had been avoided; and if real output had consequently been better sustained in 1975 and had risen less sharply than it did in 1976 and 1977.

(2) German policies

A similar case can be made against the reduction of the already moderate rate of credit expansion in Germany in 1974.

German policies in 1973 were aimed at bringing down the inflation rate and at maintaining or increasing export market shares. To this end, fiscal and monetary policy was applied to squeeze internal demand and the D-mark was allowed to appreciate. "The restriction of internal demand would stimulate German industry to take full advantage of the ongoing boom in the rest of the world .... The revaluation of the D-mark would protect the economy from imported inflation." 1/

While fiscal policy was expansionary in 1974 the Bundesbank kept monetary policy tight until the autumn, holding to the view that price increases, even those originating from the oil price increase, should be checked. 2/ Nevertheless, wages rose substantially, 3/ under the influence of booming exports in 1973 and continuing export strength (promoted by expansionary policies in neighboring countries and by export contracts secured in 1973). The tight monetary policy and the strengthening current account balance with surrounding countries led to a renewed marked appreciation of the D-mark and a weakening of other currencies such as the franc and lira. These movements had the effect of mitigating the oil price effects and moderating the rise in consumer prices in Germany, and intensifying them in the depreciating countries. In Germany the effect of the stringent monetary policy was to keep down the rate of inflation (which levelled off in 1975), but to reduce the profitability of import and export competing sectors and provoke marked cutbacks in the level of industrial output, employment, and business investment. One can suggest that real output in the EEC area (or in the industrial countries of Europe) would have been better maintained in 1975, and the

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1/ Izzo and Spaventa, op. cit., p. 24.
2/ Ibid., p. 43.
3/ The average contractual increase in wages was 14 per cent.

average rate of inflation in the area might not have been greater, if Germany had followed a less restrictive monetary policy in 1974 and other countries had pursued broadly the same objectives as they actually did. (Other countries which were following accommodative policies might have experienced lower rates of monetary expansion had the devaluation of their currencies not occurred.) Germany would have been exposed to a somewhat higher rate of inflation than it actually experienced in 1974 and 1975, and a less spectacular improvement in 1976; but it could probably have avoided the decline in real output and the severe shock to investment in 1975. For the group of industrial countries other than the United States the outcome could have been a more favorable combination of real output growth and inflation on average in 1975. 1/

4. Canada's problems in the late 1960's and early 1970's

Thus far this survey has not touched upon Canada's experience in detail. One can now see that it had much in common with that of other countries, and some differences, due to the fact that Canada was especially exposed, both to the impact of changes in U.S. policies and, because of the structure of its output, to pressures on the general level of costs and prices generated by fluctuations in world food supplies and increases in world commodity prices. A brief account of Canada's economic problems in the late sixties and the first half of the 1970's will serve as an introduction to later sections of this study treating the issue of the relation between unemployment and inflation in Canada and Canadian experience with a program of direct wage and profits controls in 1975-78.

1/ For instance, the outcome might have been the maintenance of about the same rate of real output growth in 1975 as in 1974, without a higher rate of price increase, made possible by a somewhat less drastic deceleration of money growth in 1974 (largely in Germany). Compare Chart IV.

Canada entered the 1960's with heavy unemployment, substantial idle capacity and a near zero inflation rate. 1/ The period 1961-65 was one of rapid real economic growth, high private investment, and declining unemployment, due to stimulative monetary and fiscal policies in both Canada and the United States, and the pegging of the Canadian dollar at a favourable rate in 1962. By late 1965 unemployment had been reduced to 3.5 per cent, and prices and wages, which had been rising very moderately, began to increase quite rapidly in 1966. Demand pressure moderated in 1966-1967, but the impact of inflationary policies in the United States contributed to keep costs and prices in Canada under strong upward pressure. Canadian competitiveness improved sharply vis-a-vis the United States between 1966 and 1968 but deteriorated in 1969-70, when Canadian wages were exposed to forces similar to those which precipitated the wage explosions in the European countries described earlier (see Charts VIII and X). Although the rate of price increase decelerated more markedly than in the United States in 1970, this was partly due to the freeing, and marked appreciation, of the exchange rate and to a program of price restraint in effect at the time. Wage increases did not moderate correspondingly; most wage and earnings series showing relatively constant rates of increase from 1969 to 1970-71.

The fact that the fixed exchange rate continued to be maintained at the 1962 level until 1970 was a crucial element in the transmission of demand and price pressures from abroad during 1968-1970. 2/ The failure

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1/ See Prices and Incomes Commission, Inflation, Unemployment, and Incomes Policy (Ottawa 1972), Summary Report, pp. 9-22, and Final Report, Chapter I; and Anti-Inflation Board, Inflation and Public Policy, "The Historical Record", pp. 24-29.

2/ Prices and Incomes Commission, Summary Report, p. 11.

to tighten monetary policy and let the exchange rate appreciate sooner, as a means of insulating the economy from the effect of excessive monetary expansion in the United States, seems the more surprising in Canada's case since the fixed exchange rate was a comparatively recent innovation. It should be remarked, however, that the authorities had some reason to fear that, because of linkages between wages and prices in Canada and in the United States, an appreciation of the rate might not result in a commensurate slowing of nominal wage and price increases in Canadian dollars. 1/ As it was, stringent macroeconomic policies were adopted in late 1969, after a marked acceleration of wage increases during 1969, and the appreciation served to reinforce the weakening of Canadian competitiveness, making it more difficult to restore a high level of employment after the sharp downturn in 1970. 2/

The difficulty of economic management at this time was tremendously enhanced by the disparity of unemployment rates in different parts of the country. While unemployment in Quebec and the Atlantic provinces exceeded 8 1/2 per cent and rose rather than fell between 1971 and 1972; 3/ in Ontario and the Prairie Provinces it had been reduced to little over 4 1/2 per cent by 1972.

1/ The Prices and Incomes Commission report noted that "Rather disturbingly...it appears that...a particular price or wage change in the United States is reflected in Canadian prices or wages in the same way whether or not the exchange rate also changed during the period," Final Report, p. 109.

2/ Between 1969 and 1970 the growth of national expenditure in real terms was cut by more than a half. Overall unemployment rose from 4.5 to well over 6 per cent in the second half of 1970 and throughout 1971 and 1972 (seasonally adjusted figures). See C. Green and J.M. Cousineau, Unemployment in Canada: The Impact of Unemployment Insurance (Ottawa 1976), p. 5.

3/ Though also relatively high, the unemployment rate in British Columbia was not a matter of the same concern because it was stemmed largely from the heavy migration of job seekers into the province and the seasonality of work in some of its industries. See Prices and Incomes Commission, Final Report, p. 99.

The continuing high level of unemployment was of great concern to the public and the government. "The perceived task in 1971 and 1972 was to bring the country out of the recession as quickly as possible. As a result, the policy levers were abruptly switched from heavy constraint to vigorous stimulus" ..."In restrospect, the macroeconomic efforts to bring the economy out of the 1969-70 recession involved a degree of economic stimulus which was too intensive and which was maintained too long." 1/

Although there were indications that a more restrictive policy stance was called for, the Budget of early 1973 was again intended to be stimulative. 2/ However, partly owing to the effects of strong fiscal drag, and partly owing to decisions taken at other levels of government, the realized stance of fiscal policy became somewhat less expansionary in 1973 and 1974. Monetary expansion continued to be very rapid in 1973 and accelerated to an unprecedented rate in 1974, implying a substantial acceleration of inflation in 1974-75.

In retrospect, it is clear that politicians, the general public and the government, underestimated the difficulty of bringing unemployment rates down to the levels achieved in the mid-1960's in the fundamentally changed labour market conditions of the 1970's. The large number of new entrants to the labour force, due to the very high birth rates of the fifties and sixties and the sharp increase in participation rates for married women that was associated with the subsequent decline in birth rates, has tended to raise the level of unemployment in Canada, and in the United States, in recent years. These demographic influences have

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1/ Anti-Inflation Board, op cit., pp. 27,29.

2/ See quotation from the Budget Speech of February 19, 1973, cited in ibid., p. 28. See also discussion of policy considerations, pp. 29-32.

been far more pronounced than in other industrial countries (Chart XI). In addition, as geographically very large countries, both Canada and the United States face more severe problems of regional unemployment than the other countries.

It is generally agreed that Canadian policies at the end of the sixties and during the early seventies went from being unduly restrictive to being unduly expansionary. The harsh shock of deflation in 1969-70 led to a greater under-utilization of labour than was evident from the unemployment statistics at the time, and this compounded the unemployment problem of the subsequent years. 1/ By exacerbating the contrast between labour market conditions in Quebec and the Atlantic provinces and the rest of Canada, the downturn intensified the political division between French and English speaking Canada, and at the same time created a situation in which it was extraordinarily difficult to devise a national policy that would be appropriate for both major areas.

The Canadian authorities were also confronted with exceptionally difficult circumstances for policy-making imposed by the immoderate policies and erratic shifts of U.S. demand management over this period. Indeed it could be argued that some of the most evident shortcomings of Canadian policy were directly due to the difficulty of quickly sizing up and responding to sharp changes in U.S. or world economic conditions. This is especially true of monetary and exchange rate policy. The subsequent course of Canadian economic history would have been very different if monetary policy had been tightened and the exchange rate had been allowed to appreciate concurrently with, instead of after, the inflationary monetary expansion in the United

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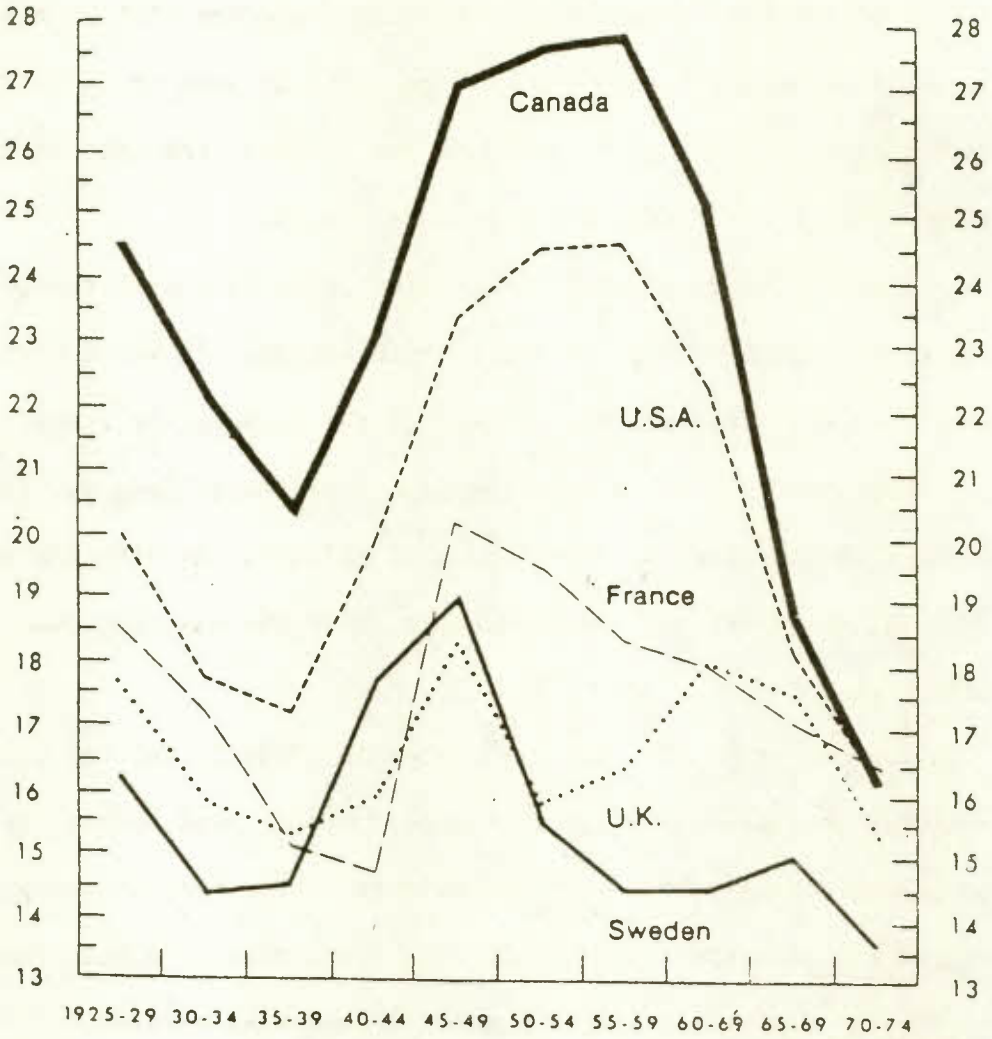
1/ These developments are described in Section III. 1.

CHART XI

Birth Rates, Selected Countries,
1925-1974
(number of live births per thousand population)



Source: United Nations, Demographic Year Book, 1974.
Chart reproduced from Canada's Economy--Medium-term Projections and Targets, Department of Finance, Ottawa, February 1978.

States in 1967-68. In the early 1970's an overvalued exchange rate, in terms of wage costs, increased the difficulty of expanding employment opportunities in labour intensive manufacturing and services such as tourism, thus intensifying the problem of reducing unemployment in the less resource rich provinces of Eastern Canada. A perhaps even more serious result of the overvaluation, for the long run, was that it discouraged the authorities from allowing the exchange rate to move up in 1972-73 when an appreciation was needed to insulate the economy from the impact of the rapid rise in world food and commodity prices.

The failure to correct fiscal drag until 1975 also tended to inhibit the growth of employment in the private sector. It would have been desirable to correct fiscal drag as part of the stimulative fiscal measures in the early 1970's. As it was, the impact of fiscal drag was tremendously strengthened by the rapid inflation of 1973-74. As with the exchange rate changes, the correction was made only after the damaging consequences had been felt.

The memory of the sharp recession in 1969-71, and the continuation of politically disruptive levels of unemployment, predisposed the government to pursue strongly expansionary policies in the face of sharp restriction in the United States in 1974-75. The extraordinary divergence of policies in the two closely linked economies at that time created further problems for Canada in the years that followed.

III. Issues of Unemployment and Inflation in Canada

The relation between unemployment and inflation remains a controversial issue in Canada, and an important question for policymakers. There have been a number of attempts to revive the Phillips curve by demonstrating that a stable relationship does exist between some index of labour market conditions and the rate of increase in wages (or prices). As these studies would appear to have an important message for policymakers, some questions that they raise need to be discussed here.

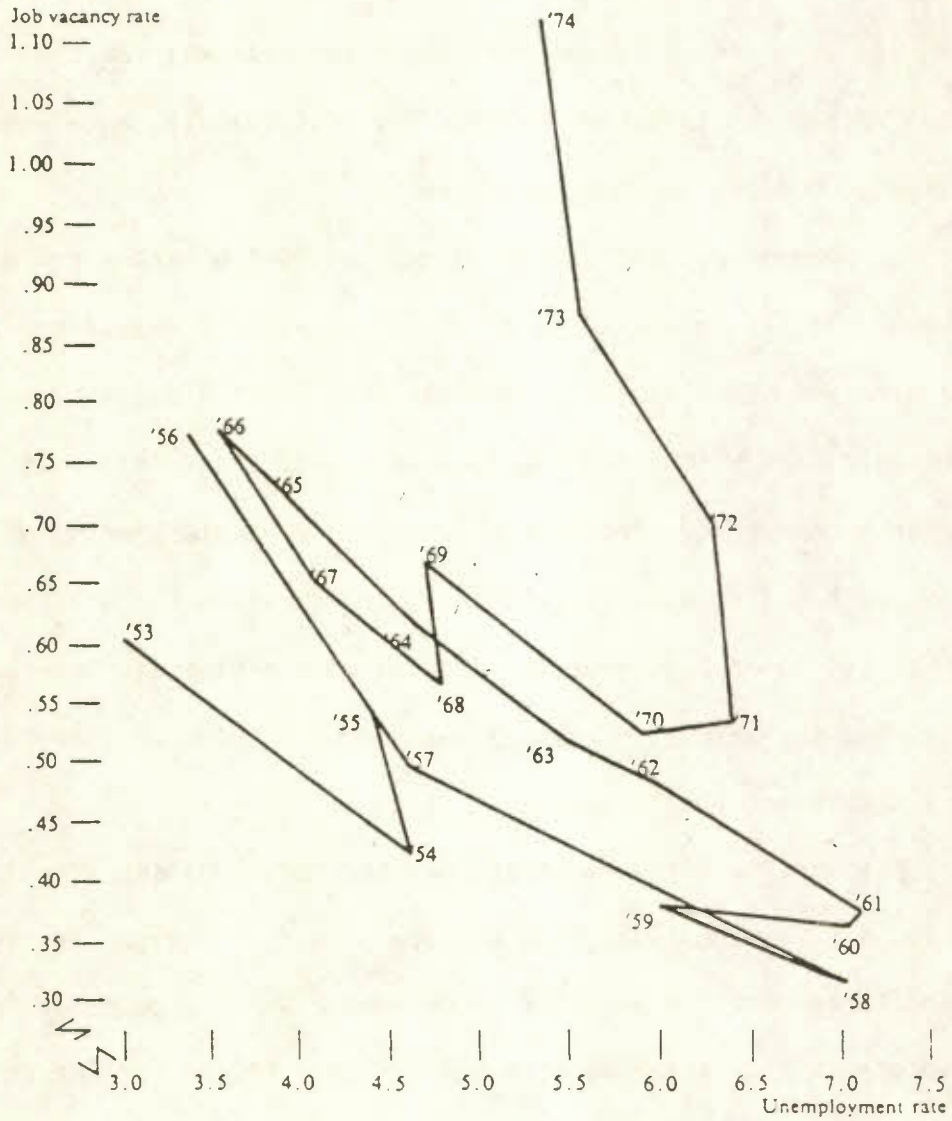
One phenomenon that attracted much attention during the early 1970's was the virtual disappearance of the usual inverse relation between job vacancies and unemployment, illustrated in Chart XII. Increasing vacancies were associated with little decline in unemployment during 1972-74. The fact that this change occurred just after a major liberalization of unemployment insurance benefits naturally prompted the question whether the one had caused the other. Several econometric studies have estimated that the insurance reform had the effect of raising unemployment quite substantially and this is now a widely accepted view.

This section first considers how the impact of demographic factors and the interplay between them and the effect of changes in aggregate demand influenced the level of unemployment and the relation between unemployment and vacancies over this period, before turning to consider the general question of the relationship between the level of demand versus supply in the labour market and the rate of inflation.

1. Demographic factors and the level of unemployment in the late 1960's and early 1970's

The salient factors influencing the growth of the labour force in Canada in recent years were (a) a precipitous drop in the birth rate after the mid-1960's from the very high levels of the late 1940's to

Chart XII. Relationship between Unemployment and Job Vacancies, 1953-74



SOURCE Based on data from Statistics Canada.

Reproduced from People and Jobs: A Survey of the Canadian Labour Market, Economic Council of Canada (1976), Chart 10-6, p. 201.

mid-1960's (Chart XI); (b) the consequent marked changes in the age structure of the population and the activity rates of various groups. The ratio of young new entrants to the existing labour force increased markedly in the late 1960's, echoing the earlier rise in the birth rate; and it continued to rise in the early seventies because twenty-year olds, who have much higher participation rates than teenagers, accounted for a growing share of the 14-24 year old age group. Activity rates for older women were also increasing sharply as the proportion of women aged 25-54 with young or school-age children declined (Table II).

Table II. Canada: Participation and Unemployment Rates by Demographic Groups, 1965, 1970 and 1975

(Percentages)

Participation Rates	Men 1/	Women 1/	Youth 2/
1965	85.5	28.6	48.1
1970	84.3	32.9	49.9
1975	83.0	37.8	56.4
Unemployment Rates			
1965	3.6	1.7	6.4
1970	5.0	3.0	10.4
1975	5.3	4.2	12.8

Source: Based on Table 2 in Canada's Economy - Medium Term Projections and Targets (February 1978), p. 12.
1/ Aged 25 and over.
2/ Aged 14-24.

Thus, under similar demand conditions, participation rates for women and young people would be considerably higher in 1975 than in 1965, while participation rates for men were likely to be slightly lower because of earlier retirements. Unemployment rates for all three groups rose steeply between 1965 and 1970, but almost all the increase in the unemployment rate from 1970 to 1975 was due to higher unemployment among women and young people.

Rising overall unemployment in the late sixties was accompanied by a marked decline in participation rates for teenagers and young men between 1967 and 1970, and a weakening of the upward trend in the participation rate for young women (with an actual decline in 1970) 1/ (Table III). Unemployment among the young would have been substantially higher in 1970, and in 1971, if their participation rates had not been abnormally low. 2/ Hence the rise in the overall level of unemployment between 1967 and 1971 was mitigated by the reduced participation of young people; and conversely, the reduction in unemployment in 1972 and 1973 was limited by their rising participation in the labor force. Had participation rates remained at their 1967 levels for teenagers and young men, and on their rising trend for young women, the overall unemployment rate would have risen to 6.9 per cent in 1971, and fallen back 6.6 per cent in 1972 and about 5.5 per cent in 1973 (Table IV). The change in the relation between unemployment and vacancies would then be quite obvious in 1969, and most of the change would

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1/ The sharp declines in participation rates for young people at this time have no counterpart in the series for older workers. The declines, for young men in 1968 and 1970, for young women in 1970, and for female teenagers in 1970, coincide with marked increases in the unemployment rates for each of these groups. The decrease in participation of male teenagers in 1969 follows a marked rise in unemployment in 1968.

2/ In 1971 there was only a slight recovery in participation except for teenagers, and unemployment among young people increased very markedly although the number of job vacancies in the economy did not decline. This underlies the unusual horizontal movement of the curve from 1970 to 1971 in Chart XII.

Table III. Participation Rates by Age-Sex Groups, Annual Averages 1959-74

(Percentages)

	14-19 years		20-24 years		25-54 years		55-64 years		65 years and over	
	Males	Females	Males	Females	Males	Females	Males	Females	Males	Females
1960	42.8	32.6	91.2	47.9	97.4	28.9	58.3	13.2	30.3	5.6
1961	40.3	32.3	90.7	48.7	97.2	30.0	58.0	14.1	29.3	5.9
1962	39.6	30.9	88.6	49.7	97.1	30.7	57.5	14.3	28.5	5.6
1963	39.2	29.9	88.7	50.3	97.2	31.7	56.5	14.9	26.4	5.9
1964	38.3	29.9	88.2	51.0	97.2	32.9	57.1	15.6	26.8	6.3
1965	38.7	30.2	87.6	52.6	97.1	33.9	57.2	16.2	26.3	6.0
1966	38.6	31.4	87.4	55.6	97.1	35.3	57.4	16.9	26.4	5.9
1967	39.4	31.6	86.0	56.6	96.9	36.9	56.8	17.0	24.7	5.9
1968	39.1	31.3	84.4	58.4	96.5	37.5	56.7	17.4	24.4	5.9
1969	37.9	31.1	84.2	59.3	96.4	38.8	56.5	17.8	23.6	5.5
1970	38.6	30.4	83.2	58.5	96.3	39.9	55.7	17.3	22.7	5.0
1971	39.0	31.1	83.4	59.9	96.3	40.9	53.9	17.9	20.0	5.1
1972	40.8	32.0	84.0	60.5	96.0	42.3	52.9	17.0	18.7	4.3
1973	43.7	34.2	85.3	62.5	96.1	44.0	52.1	17.5	18.3	4.4
1974	46.3	36.7	86.1	63.0	96.2	45.6	51.4	16.7	17.8	4.2

Source: Economic Council of Canada: People and Jobs (1976), Table A-2, p. 231.

occur before 1972. 1/ The shift would be clearly associated with the increase, for demographic reasons, in the number of young new entrants available to join the labour force. It would then be difficult to see the change in the unemployment/vacancies relationship in 1972 as evidence of the "adverse employment effects" of the 1971 reform of unemployment insurance, contrary to the view of the Anti-Inflation Board that the change "has had a significant impact upon labour force decisions, causing unemployment rates to rise above the level which would have prevailed otherwise, given overall aggregate demand conditions". 2/

2. Estimates of the influence of unemployment insurance

Numerous econometric studies have found that the changes in unemployment insurance and minimum wages had a marked effect in raising unemployment in the seventies. 3/ However, these studies have generally modelled policy variables such as benefit levels in a highly sophisticated way but have paid scant

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1/ Unemployment would have been much higher, at about the same level of vacancies, in 1969 than in 1967; and in 1970 and 1971 than in 1968.

2/ "Indicative of this shift is the change in the empirical relationship between the aggregate unemployment rate and measures of job openings, such as the Help-Wanted Index. A strong inverse correlation existed between these two series until the approximate time of the change in the unemployment insurance legislation. After a transitional period, a new relationship has been established in which much higher unemployment rates are observed for the same level of measured job openings. Many studies substantiate the judgement that the change in legislation has had adverse employment effects." Inflation and Public Policy, p. 38. (The changes in UI coverage and benefits and their apparent effects in increasing the inducement to remain unemployed, promoting higher turnover, and acting as a general economic stimulus are described in People and Jobs, pp. 143-158.)

3/ See C. Green and J.M. Cousineau, "Unemployment in Canada: The Impact of Unemployment Insurance", (Economic Council of Canada, Ottawa, 1976); H. Grubel, D. Maki and S. Sax, "Real and Insurance Induced Unemployment in Canada", Canadian Journal of Economics (CJE), Vol. 8 May 1975, pp. 174-191; S.A. Rea, "Unemployment Insurance and Labour Supply: A Simulation of the 1971 Unemployment Insurance Act", CJE, Vol. 10 May 1977 pp. 263-278, and Pierre Fortin and Louis Phaneuf "Why is the Unemployment Rate so High in Canada?" (April 1979 mimeo.)

Table IV. Unemployment, and Unemployment Excluding Teenagers 1967-73 (Actual and Adjusted for Demand Related Declines in Participation Rates of Young People) (Percentages)

	Total Labour Force			Labour Force Excl. Teenagers		
	Adjusted 1/	Actual	Difference	Adjusted 1/	Actual	Difference
1967	4.06	4.06	--	3.26	3.26	--
1968	5.01	4.78	-.23	4.09	3.78	-.31
1969	5.11	4.76	-.35	3.81	3.62	-.19
1970	6.54	5.85	-.69	5.00	4.52	-.48
1971	6.92	6.43	-.49	5.40	4.97	-.43
1972	6.59	6.23	-.37	5.15	4.76	-.39
1973	[5.57(-)]	5.57	... 2/	4.40	4.32	-.08
1974	...	5.41	... 2/	4.15	4.15	-

Source: Based on data given in Economic Council of Canada, People and Jobs (1976), pp. 231-234.

1/ Adjusted figures assume that participation rates for teenagers and young men would have been maintained at their 1967 levels and participation rates for young women would have continued their upward trend, but for the influence of weak demand, and that the whole of the difference would have been reflected in higher unemployment than actually prevailed.

2/ Teenage participation rates in 1973 and 1974 considerably exceeded those in 1967.

attention to the demographic factors. 1/ Sometimes the authors do not hesitate to draw strong conclusions about the effect of the change in unemployment insurance in a particular year although their explanatory equations do not track actual unemployment levels very well. The presence of serially correlated residuals would point to the omission of relevant variables. The substantial effect which the unemployment insurance reform is found to have had, actually seems to arise because the reform occurred just when an increase in labour demand, and a consequent decline in unemployment among adult men, coincided with a rise in the overall unemployment rate, due to the sharply increasing number of new entrants to the labour force under the influence of demographic factors and the strengthening labour demand.

1/ This applies especially to the study by Grubel, Maki and Sax. In Fortin and Phaneuf's study, the demographic variable also tends to understate the factors making for higher unemployment among the young in the early 1970s, because it does not capture the marked rise in participation rates of 14-24 year-old males, and smaller rise for females, to be expected from the increasing proportion of 20-24 year olds in the group.

Green and Cousineau, for instance, estimate that the unemployment rate was around 0.7 percentage points higher in 1972 and 1973 than it would have been had there been no change in the insurance system. However, much of their work takes the changes in the unemployment/vacancies relationship as evidence of increasing labour market "friction" resulting from unemployment insurance, without allowing for the effects of demographic factors or changes in participation rates in this connection (see Chapter 4 and p. 110). The authors even comment "We know of no evidence indicating that there was in 1971-72 a sudden and large change in relative demands and supplies of labour which could have produced serious structural imbalances in the labour market." (p. 56).

Their main estimates suggest that the level of unemployment was unusually high in 1971-73, relative to labour demand and supply as represented by the variations of real GNP and the labour force around their respective long-term trends (Chapter 5); but this takes little account of the demographic factors mentioned on pages 76-8 above. Their equation estimating the level of unemployment without the change in unemployment insurance, actually underestimates unemployment continuously between mid-1969 and the second quarter of 1973, except for end 1970-early 1971, when participation rates for the young were most depressed (see their figure 5.2, p. 76). Thus it seems to be underpredicting the level of unemployment to be expected with the demographically induced changes in the age/sex composition of the labour force over this period. They then investigate the indirect effect of changes in unemployment insurance on the overall participation rate, assuming that rate to be a function of the average weekly wage, the rise in real GNP two quarters earlier, the birth rate and a time trend. The last two variables are intended to capture changes in female participation rates.

It is most doubtful whether these variables can catch the full effect of demographic changes beginning in the late sixties. For instance, it could hardly be expected that changes in the birth rate would have the same influence on the participation rate as estimated over the period 1959-1971, when the proportion of women of most likely childbearing age was much higher after 1971 than during the estimation period. Similarly, it was to be expected that the changes in the composition of the potential labour supply, especially the increase in the average number of potential wage earners per household, would alter the response of the participation rate, to changes in demand conditions and price inflation (proxied in their equation by the real GNP and money wage variables). Because their equation fails to capture the effect of the unusual factors influencing the growth of the labour force and the level of unemployment in 1971-73, participation rates and unemployment are found higher than predicted after 1971, when the new Unemployment Insurance Act applied.

3. The shift in the relationship between unemployment and job vacancies

In its comprehensive study of the Canadian labour market published in 1976, the Economic Council of Canada drew attention to the importance of demographic factors, and concluded that the less favourable unemployment outcome had "resulted chiefly from changes on the supply side, particularly in the age-sex composition. In other words, this unemployment was of demographic origin and [had] clear implications for manpower policy." "And though there are more job vacancies, if corresponding numbers of new people enter the labour force, the unemployment rate may not fall and could conceivably rise." 1/ In the Council's view, demographic factors had caused a worsening in structural/frictional unemployment patterns, that was evident from the increase in the amount of unemployment associated with a given vacancy rate.

1/ People and Jobs, pp. 199-200.

It is usually assumed that a stable relationship between unemployment and vacancies exists because the two are mutually determined in the process of job search and labour turnover; and that an increase in both vacancies and unemployment, or an increase in vacancies without a reduction in unemployment, is a sign of increased "structural/frictional" unemployment. 1/

A stable U/V relationship requires firstly, that the active labour force responds consistently to changes in demand in the absence of major autonomous changes on the supply side, and secondly, that an autonomous change in supply is as likely to induce higher (or lower) demand for labour, via changes in hiring, as a change in demand is to induce higher or lower participation in the labour force with a constant or steadily growing autonomous labour supply. The second condition will not be fulfilled unless wages are equally flexible in the face of an increase in demand, or of an increase in supply of new entrants to the labour market, which is not the case. The reasons why this is not so are examined later (see pp. 83-84 below).

When the second condition does not apply, an autonomous acceleration in the growth of supply will tend to be associated with increased unemployment in relation to vacancies, concentrated among new entrants. Hence if one assumes that a stable relationship applies, and that any outward shift of the U/V curve represents an increase of "structural/frictional unemployment", one is simply defining an autonomous acceleration of the growth of the labour supply as a "worsening of the functioning of the labour market", by ignoring the fact that the market does not respond symmetrically to an increase in demand relative to supply, or to an autonomous increase in supply relative to demand.

There are in fact three or four different reasons why the U/V curve is likely to shift outward when there is an acceleration of the autonomous growth of the labour supply.

1/ See Green and Cousineau, op. cit., p. 43, and texts cited there.

a. Even if the faster growth of labour supply is associated with a corresponding acceleration of demand for labour, the numbers of unemployed persons and job openings are likely to be higher (in relation to the size of the labour force) in a fast growing, than in a slowly growing, labour market. This is so because the absorption of a higher proportion of new entrants in effect raises the proportion of the labour force seeking and finding jobs each year. 1/ If we define full employment as U = V, full employment will hold at a higher level of U and V, ceteris paribus when the autonomous growth of the labour supply is higher.

b. Because the labour market does not respond symmetrically, as we have seen, if demand does not expand in line with the now faster growth of supply, there will be more unemployment at a given level of vacancies than before. New entrants would be exposed to higher than average unemployment rates, even if there were no difference between them and the rest of the labour force in experience and qualifications (as would be the case, say, if Canada was absorbing large numbers of refugees previously employed in New England).

c. But in fact, an acceleration of the natural growth of the labour supply is inevitably associated with a structural change in the composition of the labour force, with new entrants being less experienced, less skilled, and probably less mobile, than the pre-existing labour force. Thus an acceleration in the autonomous growth of labour supply is likely to give rise to "increased structural/frictional" unemployment, but not all the shift in the unemployment/vacancies curve is attributable to those effects.

1/ In practice there may be a disproportionate increase in Vacancies because new job openings are generally included in the Vacancies figures, while rehires after lay-offs are not included in Vacancies or Help Wanted statistics (though laid-off workers are included among the unemployed).

d. Furthermore, the growth associated changes in the composition of labour supply create a context in which generous unemployment insurance provisions are likely to have an especially marked influence in keeping up the active labour force, by offsetting the effect of new entrants' increasing difficulty in finding jobs in discouraging their participation in the labour force.

More "structural/frictional" unemployment than in the sixties was certain to be encountered at a given level of vacancies in the seventies, irrespective of any change in the insurance system. The reduced mobility of the average job seeker, due to the larger proportion of married women and teenagers, increased the difficulty of matching demand and supply caused by the widely different growth of the job openings in different regions of the country. Thus rising vacancies and declining or minimal unemployment in some areas were now more likely to co-exist with rising unemployment in other regions. This tendency was compounded by the fact that the demographic influences of the decline in the birth rate and increase in the participation rate for married women were especially pronounced in certain regions of the country--not those with rapidly expanding job openings.

The behavior of the labour market is particularly likely to be affected by high unemployment benefits when there are large numbers of potential or actual secondary wage earners (i.e., married women, unmarried sons and daughters) per household. In their case, generous unemployment benefits may induce immobile individuals to join, or remain in, the labour force when they would otherwise be discouraged from doing so by the difficulty of finding a job in the locality. To this extent, favorable unemployment benefits make evident the increasing under-utilization of a rising labour supply, which otherwise would have been hidden, and reveal the regional problem of lack of

job opportunities more clearly. However, generous unemployment benefits may also discourage individuals from moving to find work in other areas, or from accepting low paid or unattractive job openings. To this extent, unemployment insurance contributes to the under-utilization of the labour supply and to widen the dispersion of unemployment rates between regions; and tends to raise the ratio of unemployment to vacancies for the economy as a whole.

We shall find it easier to understand the shift in the relationship between unemployment and vacancies in Canada illustrated in Chart XII, if we recognize that a consistent relation between the two tends to apply when demand is changing, the autonomous growth of the labour supply remaining constant, and the growth of the active labour force varying with demand; but that the unemployment/vacancies curve is liable to shift when the autonomous growth of labour supply changes.

When there is no autonomous change, the rate of increase in employment and the growth of the labour force tend to fluctuate together as Chart XIII shows. In Chart XII the inverse relation between U and V during the fifties and the sixties stems from the fact that an acceleration in growth of demand for labour usually exceeded the rise in the active labour force, and vice versa. During the early 1970's, however, the acceleration of employment was more than matched by the growth of the labour force in 1971, and almost matched in 1972, and even the very rapid growth of employment in 1973 was accompanied by almost as marked an acceleration in the growth of the labour force. Hence unemployment increased in 1971, remained about unchanged in 1972, and declined only slightly in 1973. The rapid growth of employment (high V) and slight or negligible decline in unemployment in 1972 and 1973 show up in the almost vertical movement of the curve in Chart XII from 1971 to 1973.

Developments in 1970-71 are a little more complicated to describe in terms of V and U, however, because of a rather different relationship between vacancies and the change in employment in these years. The vacancy rate generally moves quite closely with the growth of employment, 1/ especially after 1964. Thus the vertical position of the observations in Chart XII generally reflects the growth of employment over the previous year. However, the number of vacancies declines, and rises, less than proportionately with employment, when there is a sharp deceleration of employment growth associated with heavy layoffs, followed by rehiring, as in 1970-71. Probably because of this effect, there is no change in vacancies between 1970 and 1971. There would otherwise have been an exceptional combination of an increase in vacancies and a rise in unemployment. As it is, the more striking change in the movement of the curve in Chart XII occurs in 1972 rather than in 1971.

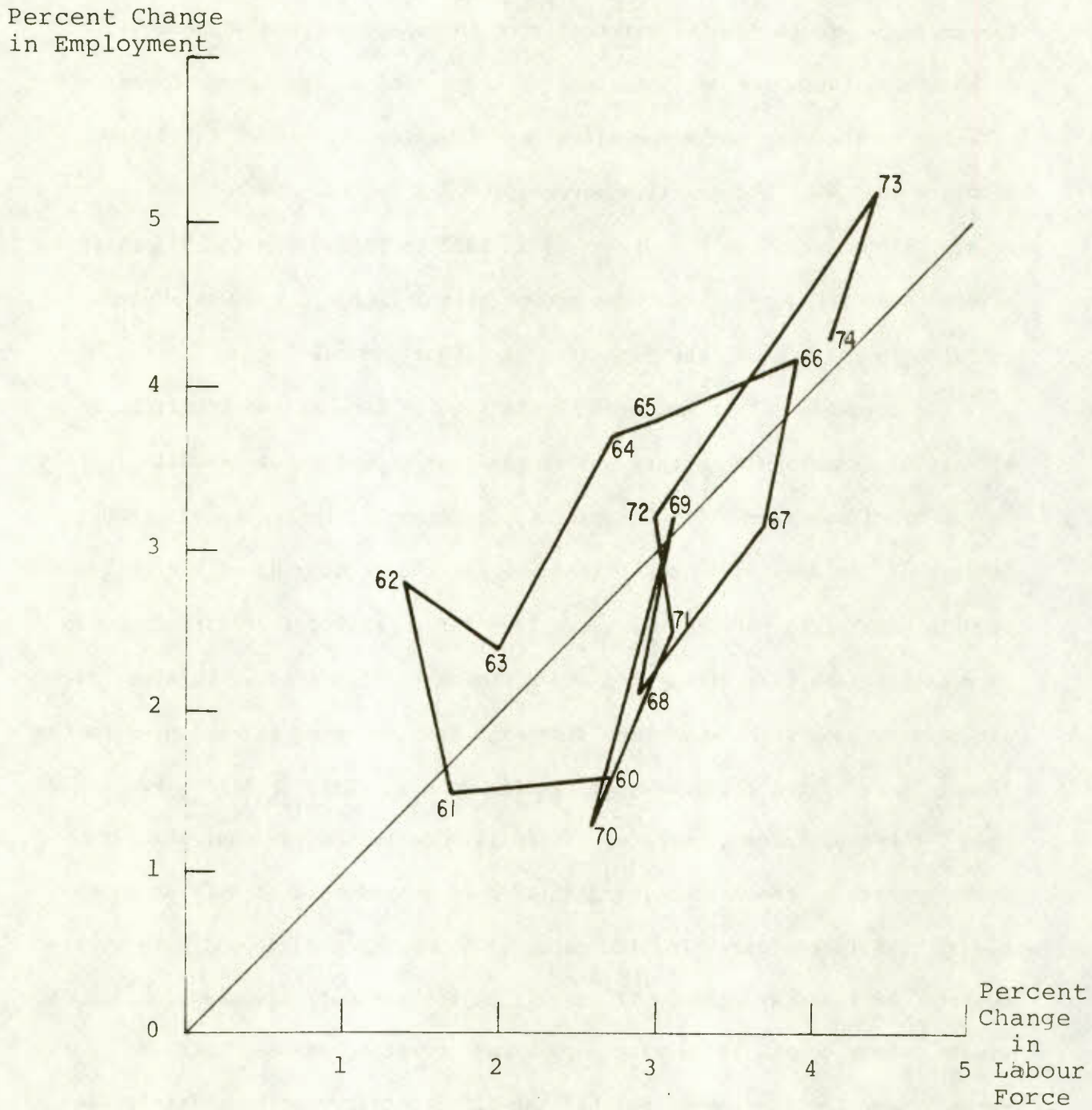
One must now consider whether the maintenance of historically high levels of unemployment in the early 1970's was due to an inflated growth of the active labour force brought about by a rise in the number of participants who were not genuinely seeking employment, possibly induced by the increase in unemployment benefits introduced in 1971.

As casual evidence, Chart XIII suggests that, in spite of the marked reductions in participation rates for young people in 1970, 2/ labour force growth responded less than usual to the sharp decline in demand for labour in that year, under the influence of demographic factors making for a faster autonomous growth of supply. However, there was a relatively slight acceleration of the growth of the labour force with increasing employment in 1971.

1/ The rate approximates to $.26 + .12\ \Delta E$ from 1962 to 1973.
2/ See page 66, footnote 1.

Chart XIII

Increases in Employment and in the Active Labour Force



In 1972, when many studies find a marked impact of higher insurance benefits in raising unemployment, there was actually a deceleration of labour force growth despite a faster rise in employment and vacancies. By contrast, there was an exceptionally large rise in the labour force relative to the very marked acceleration of employment growth in 1973. (Compare this with the relative movement of ΔLF and ΔE, evident in the greater slope away from the diagonal, in 1963 to 1964.) Up to 1973 these movements do not suggest that the growth of the labour force was abnormally inflated in relation to the expansion of labour demand.

To conclude, it is not easy to distinguish between the interrelated effects of demographic factors and of generous unemployment benefits in raising recorded unemployment. One cannot, for example, ignore the fact that because of the decline in the birth rate and the growing up of the children born in high birth rate years, as well as for general cultural reasons, an increasing proportion of married women wished to find work at this period. Yet more of them might have been dissuaded from entering or remaining in the labour force by the difficulty of finding jobs in their locality, had it not been for unemployment insurance. There is some indication that the very marked growth of the labour force in 1973-74 was associated with an exceptional rise in the participation rates of women, aged 25-54 and more particularly, of teenagers. Even if one allows for the pull of exceptionally strong labour demand in raising participation rates, one may conclude that unemployment insurance benefits had the effect of increasing participation rates and unemployment among these groups in 1973 and 1974, perhaps raising the overall unemployment rate by up to 0.75 and around 1 percentage point in these two years.

Let us now turn to consider the theoretical issues concerning the relation between unemployment and inflation.

4. Unemployment and inflation

a. The role of the Phillips curve as a policy tool

Since unemployment and inflation are key policy objectives, the notion of a demonstrable relation between them is clearly of great interest. As long as such a relation was believed to exist, it provided the policymaker with a combination slide-rule or alibi. With an accepted wage or price equation that performed well in terms of mathematical tests and that had proved stable, the policy advisor could quickly work out the various policy options, in simple form and scientific guise for politicians and the electorate. Alternatively, if unemployment was to be reduced, the policy-maker was absolved from reponsibility for increasing inflation, and vice versa. 1/

> "From one point of view", the implications of the Phillips curve "were pessimistic, for they suggested that a combination of 'full-employment' and 'price stability' was unattainable; but from another point of view its implications gave grounds for optimism: the choice the Phillips curve presented was simple, and, moreover one that could be implemented by using the demand management tools of monetary and fiscal policy... Indeed, one could go further...[because some of the other factors included as variables influencing the trade-off, such as] the dispersion of excess demand across micro markets, were also

1/ "From a macroeconomic policy perspective, the Phillips curve became a (convenient) rationale for not pursuing policies which would lower the unemployment rate. Government policymakers may choose to live with a certain amount of unemployment on the presumption that the inflation rate will be lower." D.A. Wilton, Wage Inflation in Canada, pp. 16-17.

variables susceptible to policy influence, it seemed possible to improve the terms on which the unemployment inflation trade-off had to be made rather than simply take them as given". 1/

A great void loomed before policymakers and economists when far greater rates of wage and price increase were encountered in the late 1960's and early 1970's than could have been expected at the going rates of unemployment, on the basis of established Phillips curve equations. Because of the "pivotal role" that the Phillips curve had come to play in macro-economic policy formulation, the main connecting link between the real sector, employment and output, and the price level appeared to have been lost. Most large econometric models of the economy relied on the relation between labour market conditions and wage movements to provide the crucial link between changes in aggregate demand and changes in the rate of inflation. 2/ The consequent "demand" for a stable Phillips relation induced intense efforts to recover such a relationship. "First it was argued that measured unemployment did not represent true unemployment"--i.e., the degree of tightness in the labour market; and secondly, the theory was refined to permit stronger, and different price effects". 3/

b. The "expectations augmented" Phillips curve

A theory to explain the shifting of the curve was readily at hand. Friedman, Phelps and others had argued that, in the absence of money illusion, the association observed in the short run between the level of unemployment and the rate of wage increase must be unstable. Wage bargaining

1/ David Laidler "Expectations and the Phillips Trade-off, a Commentary" Scottish Journal of Political Economy, February 1976, pp. 56-57.

2/ See Auld, Christofides, Swidinsky, Wilton, The Determinants of Negotiated Wage Settlements in Canada (1966-1975), pp. 2-3.

3/ Michael J. Piore "Unemployment and Inflation: An Alternative View", Challenge, May/June 1978, p. 31.

was concerned with real wages. Hence as labour and managements came to expect the rate of price increase that resulted from the rate of wage increase associated with a given level of unemployment, they would claim--or agree to--larger nominal wage increases to allow for the expected rate of inflation. Thus, in their view, the Phillips curve must become progressively steeper over time. Other economists argued that a stable relation between labour market conditions and wage (or price) inflation could be recaptured by including changing price expectations as a variable along with unemployment in estimating the "expectations augmented Phillips curve". 1/

c. Conditions needed to establish the existence of a "natural" rate of unemployment

Some very important consequences would follow if it could be shown (i) that the rate of wage, and hence of price, increase (p) is determined by conditions in the labour market (as indicated by some measure (y) such as the unemployment percentage) and the prevailing expectations of price inflation (p^e) so that $p = g(y)+p^e$; and (ii) that p^e will gradually come to equal the actual rate of inflation p if that rate is continuously maintained. 2/ In that case, $p = g(y)+p$, and $g(y) = 0$. That is to say, labour market conditions have no effect on the rate of price increase. If y is a measure of unemployment this would imply, first that the "non-accelerating inflation" equilibrium rate of unemployment ($g(y) = 0$)

1/ Piore comments that the refinement was "handled in such a way that one is unsure whether the theory is being used to explain the data or the data reworked to fit the theory...in the case of the expectations variable there is almost certainly a great deal of the latter effect: the estimation techniques have allowed the researcher to pick out from the data precisely those which best fit the theory". Ibid, p. 31.

2/ This account is based on Laidler, op. cit., pp. 61-62.

is compatible with any steady rate of inflation; and second that, ceteris paribus (i.e., so long as the basic characteristics of the labour market remain unchanged) it will be impossible permanently to reduce the level of unemployment below this so called "natural" rate by maintaining a higher rate of inflation. 1/

If the actual rate of price increase does not tend to catch up completely with price expectations--for example, because wages do not adjust fully for price increases--then the long-run curve will be steep but not vertical. This would imply the possibility of maintaining a slightly lower level of unemployment continuously by tolerating a higher rate of inflation.

If established, propositions (i) and (ii) above would undermine the implications of the original version of the Phillips curve, and would destroy the case for Keynesian aggregate demand policies aimed at supporting the level of employment. The message is obvious, the policymaker should be concerned with inflation, not with unemployment, since he cannot influence the level of unemployment except in the short run. Clearly, it would be most useful for the policymaker to know the level of unemployment which--given the characteristics of the labour market--cannot be exceeded for long without accelerating inflation--if such a constraint could be shown to exist. So economists have shifted their attention to estimating the steady-state level of unemployment.

To confirm the existence of a steady-state "natural" rate of unemployment, it was necessary to demonstrate conclusively that strong demand for labour, as indicated by low unemployment (or some other appropriate measure) had a positive effect in the short term, raising the rate of wage (or price)

1/ See the discussion of the monetarist view of inflation in Section I, part 3.

increase with given price expectations determined by recent experience, and that high unemployment had the reverse short-term effect of moderating inflation. 1/ If such a relationship could not be established, there would be no grounds for thinking that there was some unique level of unemployment that alone was consistent with stable rates of inflation. 2/ It was of course difficult to establish such a relation when unemployment was rising but wage and price inflation was accelerating.

The efforts to find variables that perform better than unemployment, in explaining the rate of wage increase, are more interesting as illustrating certain important characteristics of the labour market, than convincing as proofs of the importance of "excess demand for labour" as an explanatory variable.

In order to understand what is involved when different explanatory variables are substituted for the general level of unemployment, it is necessary to consider the theory underlying the Phillips curve. One reason why the concept so quickly became accepted doctrine was that, as interpreted by Lipsey, it fitted perfectly into the neo-classical account of a real world composed of efficient markets operating to balance supply and demand. In fact, the proof that the law of supply and demand applied in the labour market--the most important market of all--constituted a crucial underpinning for the entire system. 3/ The "proposition that the change in money wage

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1/ Such a demonstration required the estimation of wage and price equations with the right characteristics and statistical properties. These requirements are stated very clearly by Auld, Christofides, Swidinsky and Wilton, op. cit., pp. 32-33.

2/ Or for thinking that there was some limited long-run trade-off between unemployment and inflation, i.e., a steep long-run curve.

3/ As such it was of course a vital element in the monetarists' account of the stability of the real economy. See Section I. 3.

rates will respond to demand and supply conditions within the labour market would appear to be an elementary principle of economics"... For example, most economists would regard the statement that "the price of wheat (and the rate of change in the price of wheat) will respond to demand and supply conditions within the wheat market as elementary and non-controversial". 1/

5. Distinguishing characteristics of the labour market

However the market for labour actually differs in many important respects from the market for wheat or apples. (Let us say apples in order to avoid equating a man to a grain of wheat.) The buyer of apples does not have to consider the reaction of the other apples in his basket if he buys another apple of the same kind at a higher or lower price than the rest. Apples cannot tell each other what they cost. Nor does the service which an apple performs affect its social standing among other apples. For many reasons connected with these differences, the price of labour is not determined by supply and demand in the classic manner; and the market does not clear through wages declining as long as there are unemployed workers. Perhaps the most important factor in this connection is that increasing unemployment (unsold apples) does not make it possible for the typical employer to take on new workers (acquire apples) at lower wage rates. Employed workers are able to maintain the nominal (or even the real) value of their wages by explicit or implicit contracts, because large employers cannot, or would not wish to, replace their existing labour force in the short run, 2/ and even small employers may be disinclined to do so because of the losses involved in terms of skills acquired on the job,

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1/ Auld, Christofides, Swidinsky and Wilton, op. cit., p. 29.

2/ Though in the long run they may shift production to other less organized, and lower wage labour markets.

personal ties, and worsened labour/management relations. An enterprise cannot afford to acquire the reputation of being a bad employer and to find itself unable to attract reliable workers.

It follows from these characteristics of the labour market:

i. that money wages are sticky in a downward direction;

ii. that established employees have more power to maintain nominal wages than unemployed workers have to increase employment by accepting lower than going rates of pay;

iii. that the rate of wage (and price) inflation is more sensitive to changes in the bargaining power of established employees, brought about by changes in aggregate demand, than it is to changes in the demand versus supply situation in the labour market arising on the supply side; and consequently

iv. that the rate of change in wages will be more responsive to changes in the rate of expansion of demand than to the absolute level of demand versus supply in the labour market. This implies that the vacancy rate will provide a better indicator of wage movements than the unemployment rate when there is an autonomous increase in the growth of labour supply.

6. Limitations of the Lipsey wage adjustment function

Now this emphatically is not the kind of labour market that Lipsey envisaged when he formulated his model of the Phillips curve as "an explicit wage adjustment function based on the existence of disequilibrium in a competitive labour market." 1/ Under the conditions just described, an increase in unemployment due to a weakening of demand for labour will have more effect in moderating wage increases than a similar increase in unemployment due to

1/ Wilton op. cit., p. 13. The implications of Lipsey's derivation of the Phillips curve are explained extremely well on pages 20-25 of this study.

an increase in the number of new entrants to the labour force. "The great simplifying property of the Phillips-Lipsey model is lost." It is no longer possible to assume that "Even though the underlying labour demand and supply curves may be shifting about, we need not worry about isolating the causes of such shifts." 1/ The rate of wage increase is not a function of the level of demand versus supply, as postulated by Lipsey because wages do not respond symmetrically to a reduction in demand or to an equivalent increase in labour supply. The relation between the level of unemployment and the rate of wage increase is unstable because, even if the level of unemployment truly represents the amount of idle labour capacity, the rate of wage increase is not determined by the degree of idle labour capacity.

7. The search for indicators of excess demand for labour other than overall unemployment

The earlier discussion of the relation between unemployment and vacancies has a bearing on the search for variables that perform better than the unemployment rate as an indicator of wage movements. Some researchers, notably Wilton and his three co-authors in the study cited earlier, have found that the vacancy rate now provides a better proxy than the unemployment rate for the influence of labour market conditions on wages. The characteristics of the labour market as described here imply that this would be so when the growth of the labour supply was accelerating. As long as the autonomous growth of the labour supply is constant, changes in demand for labour will be consistently reflected in the changes in unemployment. This will not be so when the growth of potential labour supply is radically affected by autonomous factors, such

1/ Ibid, pp. 23-24.

as demographic changes. 1/ Other variables, such as vacancies or the unemployment rate for adult men, then provide a better indication of changes in labour demand. But, when these variables are used in place of the unemployment rate, they provide a better explanation of wage movements precisely because they do not measure "excess labour demand" in the sense of demand versus supply in the labour market, but do provide a good proxy for the factors that actually influence the rate of wage increase. 2/

Other researchers, such as Perry, Hall and Wachter in the United States 3/ and Fortin and Phaneuf in Canada, postulate that the unemployment rate for men aged 25-54 constitutes a valid measure of the "tightness" of labour market conditions and that the unemployment rates for other groups should be taken to reflect both excess demand pressure and structural changes induced by demographic factors and policy variables. On this basis they construct a measure of "labour excess demand" that varies quite closely with the unemployment rate for men aged 25-54.

1/ See Auld, Christofides, Swidinsky and Wilton, op cit., p. 102. Their derivation of a relationship between U and V approximating to a rectangular hyperbola UV=k (p. 101) would not apply; and the vacancy rate could not be taken as a consistent measure of "excess demand" (p. 104). For a discussion of the relation between unemployment and vacancies, in the very different circumstances of the United Kingdom's slowly growing labour force, see Braun, "Wages in the United Kingdom. Has there been a shift in the Phillips Curve?" IMF Staff Papers, March 1971, pp. 161-167.

2/ The correlation between the vacancy rate and the rate of increase in employment during 1965-73 (see p. 76) suggests that V can only be used instead of unemployment as an indicator of the "tightness" of the labour market, if one equates "tightness" with the rate of expansion of demand regardless of supply--because there were very marked changes in the unemployment rate over this period.

3/ George L. Perry, "Changing Labor Markets and Inflation", Brookings Papers on Economic Activity 3: 1970; Robert E Hall, "The Process of Inflation in the Labor Market", Brookings Papers 2: 1974; Michael L. Wachter, "The Changing Cyclical Responsiveness of Wage Inflation", Brookings Papers 1: 1976.

Because there are few new entrants in this group, this variable is also likely to be a good proxy for the bargaining power of employed labour.

Wachter regards an unemployment rate of 2.9 per cent for men as non-inflationary. He estimates the "normalized" aggregate unemployment rate that would correspond to this, taking into account the usually higher unemployment rates of young people and women, their changing share in the labour force, and the effect of the relative increase in their share of the labour force in further increasing their unemployment rates. 1/ His estimate of normalized non-inflationary unemployment in the United States rises steadily from 4.0 per cent in 1955 to 5.5 in 1975. He uses the ratio of normalized unemployment to actual unemployment as the proxy for the influence of labour market conditions upon the rate of wage increase.

Fortin and Phaneuf construct a similar indicator of labour market conditions for Canada. In their study, unemployment rates for three groups--young men (14-24), young women (14-24) and adult women are taken to be

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1/ See summarization by Charles Holt, Brookings Papers 1: 1976, p. 162. To be more exact, Wachter estimates the non-inflationary unemployment rate for each demographic age/sex group over the period 1948-75 from the function $\ell n(U_i) = a_0 + a_1 \ell n(U_{pm}) + a_2 \ell n(RP_y)$ where U_i is the age/sex unemployment rate, U_{pm} is the unemployment rate for men aged 25-54, and RP_y is the share of young persons aged 16-24 in the total population of working age. This amounts to assuming that if the share of young persons remained unchanged, the unemployment rate for all groups would be a certain fraction of the prime age man's rate plus (or minus) a constant, and that an increase in the proportion of young people (RP_y) will have a consistent effect in raising (or lowering) the unemployment rate of each age/sex group over and above the effect due to the overall tightness of the labour market taken to be indicated by U_{pm}. The size of the coefficients a_1 and a_2 are estimated over the whole period 1948-75. But it is argued here that the relation between U_{pm} and RP_y is not consistent: that U_{pm} will overstate the tightness of demand versus supply when the growth of aggregate supply of labour accelerates, and that a_2 may be incorrectly identified as a "structural factor" since it will pick up the effect of increasing unemployment due to an easing of overall labour market tightness arising from a faster growth of aggregate labour supply.

related to "excess demand"--indicated by the adult male unemployment rate, and to "structural factors", namely the proportion of 14-24 year olds in the total population of working age, the level and coverage of unemployment insurance, the relative level of the minimum wage 1/ and the relative level of wages in the public sector. Both Wachter and Fortin and Phaneuf postulate that, even without the effect of such policy measures, "the substantial demographic shift toward a younger working age population since the mid 1950's would have induced a higher unemployment rate among young persons...because younger and older workers are imperfect substitutes for one another, and because already existing wage rigidity and fixed labour capital coefficients would have ensured that a significant part of the adjustment would have to come from higher unemployment rates." 2/

Fortin and Phaneuf treat "the apparent lack of secular upward trend in the adult male unemployment rate, whereas such a deterioration is clear in each of the other three groups," as evidence supporting the hypothesis that there is a one for one relationship between the adult male unemployment rate and the degree of "excess demand pressure" on wages. 3/ However, the absence of an upward trend in the adult male rate can be explained by the fact that, if labour demand is not increasing in line with a rapidly rising supply due to increasing numbers of young entrants, and increasing participation of

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1/ Wachter emphasized the importance of improvements in unemployment compensation and the extension of minimum wages as a factor increasing unemployment among other groups than men aged 25-54, but he did not estimate these effects.

2/ Fortin and Phaneuf, op cit., p. 11. Italics added. See also Wachter, pp. 127-128.

3/ Ibid, p. 5.

adult women in the labour force, those already in jobs do not tend to be displaced by new entrants. 1/ This is so because of the characteristics of the labour market that have been described here, reinforced by such institutional factors as redundancy provisions and pension plans. 2/ Workers already attached to the labour force are better able to protect themselves against unemployment than new entrants to the labour force; and this is an important reason why unemployment among adult men increases less than for other groups, when the growth of labour supply accelerates for demographic reasons.

An autonomous increase in labour supply is likely to be associated with a disproportionate rise in unemployment rates for the young and adult women, and to be ineffective in restraining wage increases for the employed labour force. The disproportionate increase in unemployment among groups such as teenagers and married women is only partly due to their relative immobility, inexperience and lack of training. It does not result primarily from their work being more costly--in terms of their skills and productivity at going wage rates than that of adult men they might replace--but from the fact that new entrants in these groups do not compete freely with established members of the workforce (predominantly men aged 25-54).

1/ Wachter's discussion of the causes of wage insensitivity (op cit., pp. 123-125) supports this view of the working of the labour market.

2/ The McCracken group of experts described this sequence in their report to the OECD. "Increasing costs of hiring labour and, especially firing where this is restricted by legislation, also tend to increase unemployment among new entrants to the labour force. Employers are encouraged to use natural wastage to run down employment in a recession so that the young are not hired to replace those workers who move or retire, and they thus bear much of the brunt of cyclical unemployment. This reflects part of a wider problem that an element of "duality" exists in the labour market between those with employment and those without, with the first interest of organised labour being to defend the position of their members without regard to the effect on other groups (the impact of the recession on guest-workers and potential guest-workers in Germany and Switzerland being extreme examples.)" op cit., p. 145.

The question then arises, had the faster natural growth of the labour supply occurred when demand for labour was expanding rapidly in the early 1960's, and when employed wage earners were in little danger of losing their jobs, would not the outcome have been a smaller reduction in the adult male unemployment rate than actually took place and a larger intake of young entrants than occurred in 1968-72? That would imply that the distinction drawn between "demand related" unemployment and "structural unemployment" is arbitrary. The adult male unemployment rate is not a consistent measure of the tightness of the labour market since relative unemployment rates are influenced by the coincidence of demographic changes in the labour supply with strong or weak demand conditions. 1/ If one assumes that "demand related" unemployment for the other groups should bear a consistent relation to the unemployment rate of adult males, one is ascribing variations in relative rates of unemployment entirely to "structural factors" when in fact they are in part related to demand/supply conditions. What we end up with is not a "measure of labour market tightness" but simply a variable that moves closely in line with the unemployment rate for adult men. This proves to be a better explanatory variable than the overall unemployment rate precisely because the bargaining power of employed labour is not very sensitive to the "tightness" of the labour market.

The danger in all this is that if restrictive demand policies do not show up in higher unemployment for adult men, but in increased unemployment among the young and adult women, unemployment is said to have increased for "structural reasons" and demand management is absolved from responsibility for it. There is a real danger of "vicious circle" effects--since

1/ This point is more important in the Canadian than in the U.S. case because in the United States the increase in new entrants to the labour force was less concentrated in time and did not coincide to a large extent with a slowing of the growth of demand for labour.

restrictive policies may cause the estimated "natural rate" of unemployment to rise, suggesting that the increased unemployment is due to factors unrelated to the level of demand. The finding (or engineering) of a stable relationship between a supposed indicator of "excess labour demand" and the rate of wage or price increase, also provides apparent support for the view that the rate of inflation in the short-run is strongly conditioned by demand and supply in the labour market; and for contending that maintaining a lower level of unemployment than some estimated "natural rate" must entail accelerating inflation.

In fact as Section I of this paper suggested, the rate of inflation in the short run seldom is causally related to the absolute level of unemployment. A high level of unemployment is no guarantee that inflation will not accelerate; and while it is difficult to secure a rapid reduction in the existing level of unemployment without exacerbating the going rate of inflation, there is little reason to suppose that there is some absolute level of unemployment well short of full employment, at which the rate of inflation must tend to accelerate.

8. Some conclusions

The persistence of high unemployment in Canada during the first half of the seventies, despite rising job vacancies and employment, was primarily due to the acceleration of the autonomous growth of labour supply, reflecting the large numbers of young people and married women becoming available to join the labour force: it was not basically due to any radical change in the behaviour of individual labour market participants, or to the influence of policy changes causing increased frictional unemployment and imbalances.

It is commonly argued that if relative wages were more flexible, more jobs would be forthcoming for the young people and older women entering the labour force, and that overall unemployment would be lower. However, if new entrants do not compete on an equal footing with the existing workforce for existing jobs, there is little reason to suppose that a slight reduction in their relative wages (with the abolition of minimum wage provisions, etc.) will produce a marked increase in job openings. The more likely outcome is a sharp fall in starting wages to a level that discourages secondary workers from entering the labour force. While this would provide a solution to the "problem" of a high unemployment rate, it would not avoid under-utilization of the potential labour force, loss of real income, and serious attendant social and political problems. It could entail less than subsistence wages and poverty among unorganized wage-earners, widened income differentials between prosperous and depressed regions, and in the Canadian setting, an exacerbation of political conflicts between the Provinces.

Policymakers need to recognize that a faster autonomous rise in labour supply will make it difficult to avoid an increase in unemployment. In Canada's case, an early focus on the problem would have underscored the need to promote employment creating investment in the private sector, and the importance of avoiding an overvaluation of the exchange rate in terms of relative labour costs.

The obverse of the difficulty of new entrants in securing entry into the labour force is the difficulty of reducing the overall level of unemployment without intensifying wage pressures by increasing the bargaining power of the established labour force. Would it have been possible for the authorities to have worked out a program of measures to promote increased hiring of young people and women with business and unions, possibly even mitigating the general tendencies to wage inflation by policies in this field?

IV. Canada's Anti-Inflation Program 1975-1978

1. The setting for controls

During 1974-75 economic policy in Canada was aimed at maintaining output and employment in the face of recession in most other industrial countries. Real output and incomes held up relatively well and employment rose, although unemployment also continued to increase. But costs and prices rose much faster than in the United States, and while inflation abroad was moderating, Canada was facing accelerating wage and price increases against the background of very large public sector deficits.

Claims for very large wage increases were strongly pressed in 1975 because substantial increases in money wages in 1973 and 1974 had not kept up with the rising cost of living, and real wages had declined in many sectors of the private economy, while profits were at record levels in these years. Pressures for wage increases were also strengthened by marked differences in the size of wage increases in different industries and by very large increases won by certain groups of public sector employees. While real wages in manufacturing, construction and wholesale trade had declined in 1973-74, real wages in mining and forestry had gone up by 5-7 per cent, and in finance, insurance and real estate by about 3 per cent. Employees in semi-public enterprises had secured an average 19 per cent increase in yearly money wages under new contracts in 1974. In 1975, claims for almost unprecedented wage increases were being put forward to restore real earnings, to match earlier settlements and to guard against future losses in real earnings being caused by the faster rate of price increase that was expected to result from rising costs of housing, energy, insurance and municipal taxes.

In September 1975, the federal and provincial governments were faced with major disputes in public service sectors and with indicators showing declining industrial production and GNP growth for the first half year. Unemployment was still increasing; prices were rising at double-digit rates, and wage settlements in the second quarter provided for increases of more than 18 per cent on average. Public sector deficits (especially at the provincial and municipal levels) threatened to grow out of control unless immediate action was taken to limit spending or increase taxes. The Federal Government lacked the power to enforce wage restraint by provincial and local governments; 1/ and it wished to mitigate the impact of more restrictive budgetary and monetary policies upon employment. In the election campaign of the previous spring, the Conservatives had announced their intention to introduce controls--and the proposal had been surprisingly popular. So taking a leaf out of the opposition's book, the Government decided to institute a program of specific controls at the same time as it applied general financial and economic policies aimed at gradually bringing down the rate of inflation.

2. The role of inflationary expectations

When considering the policies adopted in 1974-76, one should not forget that, after the almost incredible rise in oil prices and in the context of rapidly accelerating inflation due to the lagged effects of overexpansionary policies in 1972-73, policymakers in the industrial countries found

1/ It has been suggested that the unexpectedly large wage settlements in the public sector during the second and third quarters of 1975 "might well have been one of the motivating forces behind the introduction of wage controls," and that the provinces themselves... "felt that wage demands were out of control...(and) played a major role in forcing Ottawa's hand in the direction of instigating the anti-inflation program." See L.N. Christofides and D.A. Wilton, "Wage Controls in Canada (1975:3-1978:2): A Study of their Impact on Negotiated Wage Rates (Anti-Inflation Board 1979) p. 57.

themselves confronted with a danger of hyperinflation and who knows what political consequences. It was only natural to apply the brakes rather hard in these circumstances. For the moment the risk of inflation getting out of hand seemed to outweigh the cost of increasing unemployment. Canada's Anti-Inflation Programme should therefore be seen as a rather brave attempt to avoid such a deflationary course of action--if it worked. That it was aimed primarily at preventing accelerating inflation is clear from the high (10 per cent) guideline established for wage increases in the first year.

The Canadian authorities were not alone in regarding the problem of bringing down inflation from the heights reached in 1973-74, mainly as a question of overcoming expectations of continuing high, or accelerating, inflation. Economists and policymakers were preoccupied--one might say obsessed--with expectations at this time. This was especially so in the United States, where the continuing acceleration of the increase in consumer and wholesale prices during the late 1960's and early 1970's, despite tremendous shifts in aggregate demand policies, was commonly attributed by economists to a change in expectations, 1/ due to the gradual realization of price setters and wage bargainers that monetary policy was no longer consistently aimed at ensuring price stability. This view of

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1/ Expectations were widely used as an "explanatory" variable in econometric studies. Since there were no data on "expectations," the researcher generally derived his own proxy indicator on some assumption of how expectations were formed. Because "adaptive expectations" were estimated as a function of past price increases, what was labelled "expectations" often was actually the consequence of backward-looking adjustments, which were not susceptible to such measures to alter expectations as the announcement of a target rate of money growth, etc. At the same time by projecting a past acceleration of demand into the future, not as a series of lagged adjustments and "catching-ups," but as the result of a gradual psychological change in behavior, the expectations theorists created an alarming prospect of accelerating inflation unless decisive measures were taken to counter "accelerating" expectations.

history of course led to fears that it would also be years before price setters and wage bargainers' expectations ceased to be conditioned by the inflationary policies of the early 1970s.

Monetarist economists had focussed attention on inflation as a phenomenon of the general upward movement of all prices and wages induced by an excessive expansion of purchasing power. 1/ They argued that if a certain rate of monetary expansion was consistently maintained, the average rate of price increase would come to be correctly anticipated after a time, with all prices and rates of pay increasing at about the same rate. However, if the rate of monetary expansion should change, this would be reflected mainly in a change in the level of employment because of incorrect expectations of the future rate of inflation. If a rapid rate of money growth and price inflation had prevailed for some time, and the authorities tried to curb inflation by more restrictive fiscal and monetary policies, incorrect expectations would frustrate their aim of reducing the rate at which prices rose and instead would cause a sharp contraction of output.

In this situation, Milton Friedman and others had recently suggested that indexing wages would be helpful as a means of achieving a quicker adjustment of wage (and hence price) decisions to tighter demand policies. What they were proposing was that wage earners should be guaranteed against future increases in the cost of living as a means of persuading them to moderate the size of current wage claims. This would help to keep down the actual rate of inflation in the future. This prescription strongly influenced the Anti-Inflation Board's treatment of wages and salaries and professional incomes.

1/ See Section I. 3.

Wage and price controls were adopted as a crisis measure to forestall what was seen as a very real threat of a wage explosion caused by expectations of accelerating price increases. The government was afraid that further very large wage increases would be demanded and granted because of expectations of rising inflation, and that these increases would cause the expected faster rate of inflation to materialize. Such fears might have seemed excessive, however, if the lagged effects of the drastic slowdown in the United States, Japan, and Germany in 1975 upon world commodity prices and the movement of costs and prices in those countries had been foreseen.

3. The scope of the Anti-Inflation Program 1/

Although the Anti-Inflation Program of October 1975, as it was presented, consisted of four parts, there were really two essential elements: 2/

a. General fiscal and monetary policies were to be such as to permit "a sustained economic recovery" with a declining rate of inflation. In support of this, government expenditure policies were to limit the rise in public spending and the rate of increase in public service employment.

b. The prices and incomes policy--with specific controls on certain prices and incomes--was to bring down the rate of increase in consumer prices from almost 11 per cent in 1974 to 4 per cent by the third and last year of the program, 1978.

1/ For a fuller description of measures taken under the program, see "Attack on Inflation: a program of national action" (Statement tabled in House of Commons by the Minister of Finance, October 14, 1975); and Anti-Inflation Board, First Year Report (1976), Second Year Report (1977), Third Year Report (1978).

2/ The other elements of the program comprised structural policies in the areas of energy, food and housing; strengthening competition and improving labor-management relations--but little was heard of them later.

Two basic problems requiring correction were the rapidly rising relative level of Canadian production costs and the mounting scale of public sector deficits: the latter associated with the steep rise of public sector wages and salaries. Here the problem of restraining wage increases was intensified by the recent establishment of unions, the inexperience of provincial and local governments in bargaining with militant groups, and their unwillingness to expose the public to stoppages in vital services for fear of political repercussions. While the Federal Government could bring pressure to bear on private employers to hold the line on wages via aggregate demand policies, it had no such influence over the wage settlements of the other public authorities, especially in the context of buoyant revenue. Mandatory controls could help to hold down wage increases in the public sector, which threatened to set the pattern for settlements in the private sector. Furthermore, since the realization of the planned scale of the public sector deficit depended on controlling the rate of increase in wages and salaries, the controls would be helpful in securing a more restrictive fiscal policy stance.

An appropriate combination of fiscal and monetary policies was essential for the achievement of the government's triple goals of lowering inflation, supporting employment and bringing about a reduction in the relative level of Canadian production costs in order to promote the long-term development of the economy. If the controls worked, and the public sector deficit was as planned, but monetary policy was more restrictive than foreseen, interest rates would tend to rise, inducing an increased inflow of capital and causing the exchange rate to appreciate. A similar situation would arise if monetary policy was as planned but the controls failed to moderate price and

wage increases and/or the public sector deficit and public borrowing was higher than foreseen. In either case private investment and the level of activity and employment in the private sector would suffer.

4. Controls on prices and incomes

The Anti-Inflation Program established targets for a gradual deceleration of inflation from a rate of 8 per cent in the first year, to 6 per cent in the second year, and 4 per cent in the third year.

The Anti-Inflation Board was set up to monitor the movement of compensation, prices, and profits, to disseminate information about the guidelines, and to identify contraventions. Controls were designed to restrain wage and price increases in key areas, where decisions were liable to have an important influence on the general pattern of wage settlements and pricing behavior in the economy. Legally binding guidelines for increases in wages and salaries and in profits and dividends, were applied to large firms 1/ and all firms involved in industry-wide bargaining, to sizable firms in construction, and to federal and participating provincial government departments, agencies, corporations and municipal institutions. Eight provincial governments decided to participate; the other two, Quebec and Newfoundland, established their own programs. Since the participation of provincial governments was vital, the need to secure their agreement to the proposed controls had an important influence in determining the relatively liberal compensation guideline. 2/

1/ i.e., firms with more than 500 employees: in construction firms with more than 20 employees were covered.

2/ Because of widespread concern over the rapid increase in medical costs and professional fees, all individuals or firms carrying on professional businesses were subject to the regulations--but the numbers involved ruled out any attempt at strict enforcement. Other groupings could be brought under the controls--as was the food processing industry--if they were considered strategically important in controlling inflation.

Originally it was intended that the A.I.B. should regulate prices and profits of enterprises subject to controls, both by day-to-day rules based on increases in allowable costs and by year-end tests exercising control over corporate profit margins. However, it proved impracticable to administer regulations based on allowable costs because of the huge number of goods and services on the market, and the detailed regulation of prices was formally abandoned in June 1976. The A.I.B. retained the right to require corporations to justify price increases, and could order a roll back of price increases which it considered excessive. 1/

The guidelines for wage and salary increases provided for allowable increases to cover the target rate of inflation in each year of the program, plus a further 2 per cent rise, to permit real incomes to rise in line with the projected trend growth of average productivity in the economy. 2/

The rise in real income was guaranteed by a provision that if the consumer price index rose by more than the target rate of price increase, the difference would be added to the rate of wage increase for the next year. There was no corresponding provision for wage increases to be reduced should the CPI rise by less than the target and this proved to be a serious omission.

1/ In order to secure compliance with the prices and profits guidelines, major firms were required to provide advance cost and profit information on proposed price increases. This served as an early warning system of price movements and allowed the A.I.B. and firms to analyse and determine permissible price increases under the regulations. The number of firms required to pre-notify price increases increased from 117 at the beginning of 1976 to 342 by mid-1977.

2/ There was provision for smaller or greater increases in cases where pay had risen faster or less fast than the guideline over the last two or three years. An absolute ceiling (of $2,400) was set on the average increase in pay under any settlement.

In the first year of the program, had the wage and salaries guideline applied throughout the economy and the level of employment remained unchanged, total money income would have risen by at least 10 per cent. Since the aim was to promote some rise in employment, fiscal and monetary policies were set to permit a somewhat larger rise in total nominal income--of about 12 per cent. Broadly in line with this objective, in November 1975 the Bank of Canada announced its first target for the rate of increase in the money supply of a rate of growth of "not less than 10 per cent and not as high as 15 per cent." 1/

An underlying assumption in setting the wage guideline was that prices in all the sectors covered would tend to rise at about the target inflation rate. This soon posed a problem. When the rate of inflation eased off sharply in the United States and Japan under the influence of strongly restrictive policies, Canadian export and import competing industries were exposed to sharply increased competition. Under these circumstances, the wage guideline tended to keep the scale of wage settlements in these industries higher than they otherwise might have been. Prices and profits there fell below those provided for in the program; and reduced profit margins held down employment and investment, further limiting employment in private industry. These effects were aggravated by the appreciation of the exchange rate between mid-1975 and mid-1976.

The appreciation was the result of unforeseen and in part accidental factors--but it profoundly affected the course of developments under the Anti-Inflation Program.

When the Program was devised it was expected that the controls would serve to curb the rate of inflation initially and that more restrained monetary and fiscal policies would have their effects later, when the

1/ Bank of Canada Annual Report 1976, p. 9.

rate of inflation already had been somewhat reduced. That did not happen however. The hoped-for reduction in wage increases could not possibly be achieved so quickly without much more stringent rules and more complete coverage of the economy. This was so both because of large prospective wage increases already granted under existing long-term contracts or under negotiation when the controls program started, and because of the continuing spread of large wage increases to the non-unionized sectors not covered by the controls. In the meantime, the combination of very large scale public sector borrowing with strict enforcement of the monetary target, quickly produced a powerful constraint on prices and employment in the private sector via exchange rate effects.

5. Considerations shaping monetary policy

In order to understand the course of monetary policy in 1976, a little historical background will be helpful. During the early 1970's the Bank of Canada had been criticized by economists for permitting an excessive monetary expansion following the appreciation of the dollar in 1970. 1/ In mid-1975, before the Anti-Inflation Program was set up, the Bank had announced that henceforth its policies would aim to ensure that the money supply (narrowly defined) would grow "along a path capable of accommodating a satisfactory rate of real economic growth accompanied by some slowing of the rate of increase of prices."2/ As an aid in bringing about a gradual moderation of inflation and price expectations, the Bank would set a target range, to be adjusted periodically, for the growth in the narrowly defined money supply, M_1. It was emphasized that the implementation of a steady rate of money growth would require that interest rates and the exchange

1/ See T. J. Courchene, Money, Inflation and the Bank of Canada, (C.D. Howe Research Institute, Montreal, 1976).

2/ Bank of Canada Annual Report 1975, p. 11

rate be allowed to move in either direction, not only over the business cycle but also over shorter periods. The first target was announced in November 1975, and was consistent with the realization of the first-year targets of the Anti-Inflation Program.

The constraint imposed by monetary policy in 1976 was intensified by two accidental factors: (a) the consequences of the prolonged postal strike in late 1975; and (b) the unforeseen sharp fall in U.S. interest rates early in 1976.

The postal strike caused an enormous increase in the demand for cash and in the narrow money supply. This faced the Bank with a problem in establishing the credibility of its newly instituted policy, and at the same time made it difficult for the public to foresee how the authorities would react. Possibly influenced by a decline in Canadian interest rates associated with the fall in the United States, as well as by the initial difficulties encountered in implementing the wage and price controls, 1/ the Bank decided that the underlying trend of money growth should be reduced and, on March 5th raised the Bank rate to 9 1/2 per cent. This precipitated an unexpectedly sharp increase in short-term interest rates. 2/

The fall in U.S. long-term interest rates at the beginning of 1976 presented a highly favorable opportunity for new bond issues by provincial governments and public enterprises, in respect of large capital investment projects "in the pipeline." Private Canadian corporations also borrowed heavily in foreign bond markets. The inflow of capital was further enhanced by the widened differential between Canadian and U.S. short-term interest rates.

1/ The constitutionality of controls had been challenged in the courts, the provision for adjustment for past experience was causing difficulties, and a heavy backlong of cases had built up.

2/ Bank of Canada Annual Report 1976, p. 7.

As a result of these factors, the Canadian dollar appreciated by about 6 1/2 per cent in terms of the U.S. dollar between August 1975 and July 1976. The exchange rate was about 4 1/2 per cent, higher on the average over the first program year, than during January-October 1975.

6. Operation of the controls program

During the first year of the program, the Consumer Price Index rose less than expected, due to an exceptional decline in food prices and a slowing down of the increase in prices of other goods, but not of services. 1/ These developments were influenced by the effect of the appreciation of the dollar in holding down import and export prices in Canadian dollars. Wages decelerated much less than prices and real wages rose sharply, but profits, investment and the level of employment in industry were severely constrained.

The appreciation of the exchange rate had contributed to bring down the rate of price inflation--gladdening the hearts of those who believed that a slower rate of increase would contribute to ease the long-term problem of inflation by lessening inflationary expectations. But that benefit was liable to be reversed if the heavy inflows of capital ceased. The position changed abruptly at the end of 1976 when political uncertainties after the Quebec elections caused the exchange rate to drop sharply.

At the beginning of the second program year in the fall of 1976, the controls on wage and prices were largely redundant in most sectors of the private economy, in the sense that they were exercising little if any

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1/ The year-over-year increase in prices of goods, excluding food, moderated from 9.4 in 1975 to 6.6 per cent in 1976, while that for services accelerated from 10.7 to 12.2 per cent, under the influence of the continuing rapid rise in wages and salaries and professional incomes.

additional constraint on increases, over and above that resulting from the conditions produced by financial policies. Indeed, there was a certain inconsistency in applying the wage guideline under these conditions. The guideline for wage increases tended to limit the effect of the greater than expected deceleration of goods prices in moderating wage increases. Since the reduced level of activity rendered the 2 per cent productivity growth assumption unrealistic, the 8 per cent guideline implied that unit labor costs would rise by close to 8 per cent: that is faster than the going rate of price increase for industrial goods.

By the end of the year, pressures to end controls were mounting despite increasing support for the program among the public at large. The unions' hostility to the program was strengthened by the fact that there was less specific evidence of price restraint than of restraint over wages and salaries--with fewer rollbacks of price increases than of wage settlements. 1/ Their feeling that the controls program was aimed mainly at wages was heightened by the abandonment of detailed profit regulation and easing of the profit limitations in June 1976. Business had been prepared to accept the controls program in 1975 for fear of an explosive acceleration in wage increases, but now felt there would be little risk in lifting wage controls under the existing demand conditions. The decline of the exchange rate also caused a shift of attitude against controls. For many enterprises, the effective constraint on price increases and profit margins outside the program was eased by the depreciation, and the controls now threatened to become an effective, rather than a potential, restraint.

1/ See Anti-Inflation Board First Year Report, p. 9.

The authorities in Ottawa were still fearful of losing control over wage movements in the public sector. They were also worried that decontrol might provoke a reacceleration of wage inflation because recent wage contracts had included provision for renegotiation or immediate increases and restoration of any rollbacks as soon as controls ended. 1/ They were aware, however, that full protection of wages against price increases was inappropriate in the context of the depreciation, and would negate its hoped for effects in strengthening the competitive position of Canadian producers. By mid-1977 they were, therefore, actively seeking to replace the controls by more informal arrangements with business and the unions providing for moderate wage settlements and price increases.

Having failed to secure such arrangements, the government announced in October that phasing out of controls would begin on April 14, 1978, and that the incomes guidelines would be tightened from 8 to 6 per cent. (That is to say the figure originally envisaged for the third year would be enforced. Without a change in the regulations, the guideline would have remained at 8 per cent as in the second year of the program because the consumer price increase in the second year had exceeded the target 6 per cent by some 2 per cent, and this would have been added to the original 6 per cent guideline.) In order to soften the impact of the stricter guideline on real incomes and to help maintain real expenditure, direct taxes on lower and middle incomes were cut by $100 at the beginning of 1978. The limit on dividend increases was also reduced from 8 to 6 per cent.

1/ Such so-called A.I.B. clauses were rendered "null and void" by law when the Anti-Inflation Act was amended during the third program year.

The fact that the authorities were seeking to close out the A.I.B. during the second year of operation, suggests that in their opinion it must have served its purpose during the first year or so, or that its method of operation and principles had become more of a liability than an asset in the prevailing circumstances.

7. Results achieved by controls and financial policies in 1976-77

By the end of 1977 wage and price behavior had improved very markedly, as compared to 1975. Whereas before the establishment of controls, wage settlements in major contracts had provided on average for an increase of 18 per cent per annum over the life of the contract, they were providing for increases of about 8 per cent per annum late in 1977. Consumer prices however were rising at an accelerating pace, under the influence of the depreciation of the Canadian dollar, the adjustment of government regulated energy prices, and unfavorable supply conditions for food.

Despite the moderation of inflation during the first two years of the program, developments had not been entirely satisfactory. While there was a sharp deceleration of first year increases in major wage settlements within six months of the start of the program, at a time when the economy was still growing quite rapidly, 1/ average weekly earnings and labor income per employed person rose almost as much over the preceding year in 1976 as as in 1975 2/ (Table V).

1/ See Anti-Inflation Board Second Year Report (October 1977), p. 6.

2/ Thus in spite of an exceptional rise in productivity (of 3.2 per cent) associated with the recovery of a higher level of output, unit labor costs were on average about 4 1/2 per cent higher, and some 9 per cent higher in terms of U.S. dollars, during the first program year than during the first 10 months of 1975.

Table V. Prices and Costs, 1974-78

(Year-to-Year Percentage changes unless otherwise indicated)

Prices	1974	1975	1976	1977	1978 to date 1/
Gross national expenditure prices					
Total	15.3	10.7	9.7	6.9	6.7 2Q
Consumer prices					
Total	10.9	10.8	7.5	8.0	9.0 Sept.
Ex. food	8.8	10.1	9.4	7.9	6.4 Sept.
Ex. food and energy	8.2	9.7	8.7	7.3	6.0 Sept.
Industry selling prices					
Total	19.0	11.2	5.1	7.7	7.6 Aug.
Costs					
Labor income per employed person	14.9	14.6	13.2	8.9	6.1 2Q
Productivity	-0.7	-0.6	3.2	0.7	0.3 2Q
Unit labor costs	15.8	15.3	9.6	8.1	5.7 2Q
Unit profits	25.6	-3.0	-2.5	7.3	9.7 2Q
Average weekly earnings	11.0	14.2	12.1	9.6	6.3 July
Wage settlements: first year	17.0	21.0	12.3	8.0	6.8 2Q
World commodity price index 2/	22.9	-13.2	17.5	22.9	-3.6 June
Other					
Exchange rate 3/	-2.2	4.0	-3.1	7.8	7.4 Sept.
Import price	20.6	14.5	1.5	11.8	12.6 2Q
Labor income as a share of GNP	54.3	56.6	56.5	57.2	56.4 2Q
Profits as a share of GNP	13.6	11.9	10.6	10.6	11.0 2Q

Source: Anti-Inflation Board, Third Year Report, October 1978, p.2.

1/ Data to date indicated in 1978 compared to same period in 1977.

2/ Data from the Economist, London.

3/ Change in value of U.S. dollar in terms of Canadian dollar.

A number of empirical studies 1/ have attempted to estimate the impact of the Anti-Inflation Board's controls on union negotiated wage settlements in Canada. The methods and findings of several of these studies are compared by Christofides and Wilton in their 1979 study. 2/ They conclude that the evidence from these studies "suggests three quantitative conclusions:

i) The AIB exerted a significant indirect effect on wage inflation, depressing negotiated wage settlements below values which might otherwise have prevailed.

ii) This indirect AIB impact effect on wages appears to have been greater in the public sector than in the private sector.

iii) The indirect wage impact and/or effectiveness of the AIB appears to have increased during the life of the program." 3/

Their own study suggests that in the public sector, the AIB had the effect of reducing negotiated base wage settlements on average by some 4-4 1/2 per cent per annum during the life of the AIB while in the private sector the effect was in the 3 1/2-4 per cent range.

1/ D.A.L. Auld, L.N. Christofides, R. Swidinsky, and D.A. Wilton, "The Impact of the Anti-Inflation Board on Negotiated Wage Settlements", Canadian Journal of Economics, Vol. 12 (May 1979b), pp. 195-213; L.N. Christofides and D.A. Wilton, Wage Controls in Canada (1975:3-1978:2): A Study of Their Impact on Negotiated Base Wage Rates, Anti-Inflation Board, 1979; J.M. Cousineau and R. Lacroix, Wage Determination in Major Collective Agreements in the Private and Public Sectors, Economic Council of Canada 1979; J.M. Cousineau and R. Lacroix, "L'Impact de la Politique Canadienne de controle des Prix et des Revenus sur les Ententes Salariales", Canadian Public Policy, Vol. 4, No. 1 (Winter 1978) pp. 88-100; F.J. Reid, "The Effect of Controls on the Rate of Wage Change in Canada", The Canadian Journal of Economics, May 1979; T.A. Wilson and C.V. Jump, "The Influence of the Anti-Inflation Program on Aggregate Wages and Prices: A Simulation Analysis", Unpublished paper, Institute for Policy Analysis, University of Toronto.

2/ Op cit., pp. 81-92.

3/ Ibid., pp. 87-88.

"...the impact of the AIB on aggregate wage levels accumulated very slowly as many workers were "locked-into" pre-AIB wage contracts for much of the early life of the AIB. It was only as these pre-AIB wage contracts expired that the impact of the AIB program could be brought to bear on wage levels. Based on the existing bargaining cycle, we estimate that the cumulative impact of the AIB on private sector wage rates was only about 0.8 per cent after one year and 3.2 per cent after two years, but rose quite dramatically to 6.1 per cent after three years and 7.2 per cent after four years." 1/

Frank Reid concludes "The reduction in wage settlements due to controls estimated in the present paper is of very substantial magnitude. If this reduction in settlements had been forced on the economy through restrictive monetary and fiscal policy alone, the result would have been an intolerable rise in the unemployment rate". 2/

Although they utilize different variables as indicators of labour market conditions and price expectations, and different functional forms of the equations, all the studies assume that in the absence of the AIB, negotiated wage changes after September 1975 would have been determined in the same way as over the preceding decade or so. That is to say, the structural parameters of the wage equation estimated over the previous run of years are used to estimate what settlements would have been after 1975:3. It is assumed that settlements would have responded in the same way to the strength of labour demand, price expectations, failure to keep

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1/ Ibid., pp. 88-89.
2/ Op cit., p. 223.

up with cost of living increases during the life of the previous contract, etc., as they did during the sixties and early 1970's and that price expectations would be formed in the same way. This is a strong assumption to make, given such factors as the totally different relationship between Canadian and U.S. aggregate demand policies in the two periods, the much greater flexibility of the exchange rate, and the implementation of a restrictive monetary policy emphasizing the monetary growth target. It is by no means certain therefore that wage settlements would have been as high as those estimated by the authors of the studies had the AIB not existed.

One cannot judge the results of the anti-inflation program merely by the reduction in the rate of price and wage increase that was experienced. The program was a crisis measure, aimed at frustrating a wage explosion and a sharp acceleration of inflation. To this extent, it clearly fulfilled its purpose. However, the initial strong support for the Anti-Inflation Program in an emergency setting was in a sense dissipated during the first year and a half of the program. The rise in real income over this period made it tactically more difficult to moderate the wage increases later when the consensus on the need for restraint had weakened.

The combination of continuing large increases in nominal wages and salaries, declining prices for food, and severe constraints on price increases for tradeable goods and services in 1976, and an overcompensation of the indexation adjustment of personal income tax, together resulted in an unwarranted and unsustainable increase in real after-tax income from employment during the first half of the period covered by the Anti-Inflation Program. The rise in real personal income was accompanied by a worsening of the current account, a severe squeeze on profits, rising unemployment, and declining private investment.

The authorities considered that "The decline in profit margins in 1976 was primarily a reflection of slack markets in Canada and abroad, rather than of the controls program. Most firms were unable to earn the margins which the guidelines permitted." 1/ But in a wider sense the decline in profit margins must be seen as in part the consequence of: (i) the failure of the controls program to achieve the moderation of wage increases upon which the financial policies of the anti-inflation program were predicated; and (ii) the failure to limit the financing requirement of the public sector for 1976/77 to the same level as in 1975/76, as had been foreseen--2/ mainly owing to the very considerable overestimate of revenue from personal income tax.

It is true that profits would have been cyclically low in 1976 because of weak demand at home and abroad, even if wage costs had not been rising faster in Canada than in the United States and several other major countries. The decline in competitiveness was intensified by the appreciation of the exchange rate and the profit squeeze was somewhat increased by the imposition of price controls. 3/ The appreciation was brought about by the large financing requirements of the public sector in the context of a policy restraining monetary expansion, and the consequent heavy inflows of capital induced by the high level of Canadian interest rates. 4/

1/ Department of Finance, Budget Document, March 31, 1977, p. 12

2/ See Budget Speech of May 1976, p. 33 and Table 1.

3/ On should not neglect the effect which the price control provisions may have had during the opening months of the program in holding off price increases to restore profit margins.

4/ The rate on three-month Treasury Bills was close to or above 9 per cent from March through October 1976. During the first three quarters, the net inflow of long-term capital was running more than twice as high (on an annual

The achievement of a moderation of inflation by this combination of circumstances was a fragile success. The maintenance of the exchange rate depended on the continuance of heavy capital inflows. When these were curtailed by political uncertainties late in 1976, the value of the Canadian dollar dropped by more than 6 per cent in November; and at end-year it remained about 3 1/2 per cent lower than in October. At midpoint in the Anti-Inflation Program, the authorities admitted that "the months ahead will be a severe test, as unavoidable increases in the price of food and energy and the impact of the decline in the exchange rate make themselves felt." 1/

8. Some comments

The less than satisfactory outcome of policies over the first eighteen months of the Protram was principally due to three factors:

i) The over-optimistic target for wage increases in the first year of the program. This did not allow sufficiently for the difficulty of securing a marked reduction in the average rate of increase when large increases were already provided for under long-term contracts concluded earlier. To achieve the target, the program would have had to incorporate measures to curb wage increases provided for under existing wage contracts;

ii) The enforcement of a rate of money growth consistent with the target increase in wages and with a rate of price inflation not exceeding 8 per cent during the first year of the program;

iii) An over-optimistic forecast of government revenue.

4/ (Cont'd from p. 112) rate) as during 1975. Over half the inflow was accounted for by large new bond issues placed abroad by provincial governments and their enterprises (which were running at an annual rate 50 per cent higher than in 1975). Borrowings by Canadian corporations were three times as high as in 1975.

1/ Budget Speech of May 1977, p. 19.

Owing to these factors the actual balance of public sector finances was incompatible with the maintenance of the monetary growth target and the maintenance of the going exchange rate. The mounting public sector deficit had either to be accommodated by the Central Bank, or to be financed at higher interest rates so as to secure a larger share of investable funds in Canada and induce capital flows, in which case the exchange rate would tend to appreciate. In effect, by enforcing its money growth target, the Bank of Canada achieved the target rate of price increase (despite the faster rise in unit labour costs) through the deflationary impact of the appreciation. Thus the public sector deficit was financed at the cost of raising interest rates and weakening the incentive for private investment, especially in the "open" sectors of the economy. Real incomes increased but employment declined, in part owing to the worsening of the current account and the decline in private investment.

The wage guidelines as formulated in effect guaranteed increases in real wages (except at high income levels). Thus the impact of tightening monetary conditions, due to the enforcement of the money growth target in the face of the non-fulfilment of the income guideline and the target for the public sector deficit, was bound to impinge more heavily on profits, investment and employment because its immediate effect in slowing wage increases was limited. While the slower rise in prices brought about weaker demand conditions and the appreciation of the exchange rate was subsequently reflected in wage claims, this effect was soon overtaken by the effect of the depreciation and of supply factors influencing food prices in causing a renewed acceleration of the cost of living.

It is worth considering how policies might have been improved. It might have been expedient to make express provision for a period of transition, and to set the first series of annual increase targets for a later period, say the year 1976.

A realistic assessment of the difficulty of quickly reducing the average increase in wages to the target rate might have indicated the advisability of not seeking to implement the money growth target immediately, following the abnormal growth in the public's holdings of money caused by the prolonged postal strike. In practice, however, the Bank of Canada pursued a single-minded policy of bringing down the money supply to the target levels in accordance with the policy established before the price-wage controls were instituted. In giving overriding priority to its efforts to moderate price increases and price expectations by this means, the Bank ignored the widening gap between interest rates in Canada and the United States. Thus it set the stage for the marked appreciation of the exchange rate in the first half of 1976.

When it became clear that Government revenue was not rising in line with the budget forecasts, additional taxes should have been imposed. As food prices were declining an increase in sales tax need not have caused the rise in CPI to exceed that foreseen in the program and in setting up the wages targets.

The appreciation was not sustainable given the relative movement of factor costs in Canada and abroad. It should have been avoided by more flexible and consistent policies on the part of the Federal and Provincial Governments and the Central Bank. If governments had taken steps to limit

the public sector's deficit and if the Bank had intervened to prevent the exchange rate from rising, prices would have risen somewhat more, but employment would have been better maintained and profits would have been squeezed less. Though the rate of inflation would have been higher than was actually the case during the first half of the program, the tendencies for inflation to reaccelerate in 1977 would have been less powerful. A higher level of profits, private investment and employment would probably have led to greater business confidence in Canada than actually existed at the end of the seventies.

Two main lessons may be drawn from Canadian experience with the Anti-Inflation Program. The first is the need for flexibility in implementation-(a) by measures aimed as far as possible, at correcting any nonfulfillment of targets as it occurs (e.g., in the revenue forecasts), and (b) by the adjustment of other policy variables to be consistent with the actual outcome. For example the non-achievement of the wages target and consequent rise in unit labour costs required a depreciation of the exchange rate or at the least avoidance of an appreciation.

The second is the difficulty of achieving a satisfactory outcome if the monetary and fiscal authorities pursue different priorities. Policies adopted in the spirit of countervailing forces are not likely to yield consistent "in between" results; but are likely to produce sudden shifts in policy and uncertainty. At the very least, if overall policy is to be determined by a process of "checks and balances", the contending policy-makers must take account of the effect of each other's policy stance in evaluating the probable outcome of their respective policy options.

V. Conclusions

What Caused the Inflationary Crisis of the Mid 1970's? The McCracken Group concluded that "our reading of recent history is that the most important feature was the bunching of unfortunate disturbances unlikely to be repeated on the same scale, the impact of which was compounded by some avoidable errors in economic policy." 1/

The simplified account given here apparently points to demand management-or rather the lack of appropriate demand management--as the predominant cause of the inflationary crisis of the mid-1970s and of the worsened record of inflation and growth in the industrial economies in the later 1970's. It does not suggest a major role for autonomous shocks such as crop failures, the oil price increase, and the disappearance of sardines from the coast of Peru.

However, as so often is the case in economics, there is no simple one-way thread of cause and effect, from an autonomous expansion of nominal demand, indicated by the growth of money supply, to a subsequent rise in prices. Instead there is a complex web of causation with the growth of nominal demand responding in varying degree to the ongoing rate of inflation.

Successful demand management requires appropriate macroeconomic policies to influence the general level of demand, and the general price level. Inappropriate aggregate demand policies create sectoral problems. With excessively expansionary policies there are bound to be explosive wage and price developments in particular sectors; with unduly restrictive policies there will be "structural" problems of depressed industries and depressed

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1/ Op. cit. p.14. Their italics.

areas, and heavy unemployment concentrated among particular groups of the labor force. But such sectoral problems themselves impede the successful working of macroeconomic policies.

Relative prices are not flexible as assumed by the monetarists (except in the long run which need not concern us here); and more specifically relative wages and salaries in different sectors and occupations are highly inflexible--so that a marked rise secured by one group creates strong pressures for other wage increases, even with no change in the level of demand. Successful demand management therefore requires attention both to the monetary and budgetary aggregates, and to developments in the real economy--especially to those affecting the supply and prices of basic commodities, and wage bargaining. Anti-inflation policy has to prevent, or contain, generalized pressure on costs and prices arising either via unduly expansionary financial conditions and excessive public sector deficits or via sharp upward pressures on prices and costs in particular sectors, seeking to avoid or mitigate, the effect of such pressures, in forcing up the general level of costs and prices in the economy. Only if relative prices and wages were flexible--as they are assumed to be in the neo-classical system--would the general level of prices be a purely monetary phenomenon.

We can see from this account that it will be very difficult to realize large changes in the relative costs and prices for major product groups--such as those required to accommodate the rise in the price of oil without a rise in the general price level. In practice it may be difficult to secure such changes without a substantial increase in unemployment that eventually limits the dissemination of wage increases to weaker sectors of the economy--or without major shifts in the location of production to areas of weaker

organization and market power. At the same time as the rise in oil prices has led to an acceleration of wage increases and more restrictive monetary policies in the industrial countries, it has provided a stimulus for a relative reduction in the price of manufactures versus oil to be achieved by a transfer of manufacturing production to low wage countries with weak labor organization. It should be stressed that the flexibility of relative prices in the long run is not something which comes about gradually and painlessly: it is likely to be brought about by conditions of unemployment with inflation persisting for periods of years.

Large problems need broad solutions. In analyzing recent difficulties there seems to have been altogether too much concentration upon minor causes (such as increased unemployment benefits as a cause of unemployment) and minor remedies (such as proposals for tax-based incomes policies); on cranky explanations and gimmicky solutions. Not enough attention has been paid by most governments to the complex interreactions between monetary and fiscal policy and the exchange rate that have been touched on here. One basic cause of the less successful demand management since the mid-1960s has been the failure of economic managers to realize how the workings of the fiscal, and monetary system would respond to the shock of externally generated inflation. Such effects were first experienced at the time of the wage explosions--and were felt more strongly after the exchange rate changes and oil price shock in 1973.

The first moral for policymakers from this cautionary tale is the need for a consistent set of policies; the second is the need for consistent policies over time, and the third is the need to make policies intelligible to the public.

Because policies require time to become effective; and because sharp changes in policies are liable to have disturbing, disproportionate effects in particular sectors, gradual shifts in policy are to be preferred. (Sudden sharp changes produce "faulting" of the real economy and are liable to cause earthquakes.) In crisis situations, however, the brakes may need to be applied quickly.

To be effective, a policy strategy has to be understood--as was emphasized by Professor Meade in his Nobel Prize address. Very often the success of a policy, especially one calling for sacrifices, (such as wage and price setting moderation, acceptance of tax increases, energy conservation) depends on the support of the populace, conditioned by their understanding of the need for the measures. One reason for Germany's postwar success story was the simplicity of export-led growth as the objective and its clear implications concerning economic policy and the desirable behavior of economic agents.

It may be no accident that economic policymaking faltered at about the time when the economics discipline became a mathematical science--and a great advance in technique was accompanied by:

1. Loss of accessibility to non-economists
2. Adoption of oversimplified assumptions
3. Concentration on equilibrium, maximisation, and rationality--the whole neo-classical structure--as an underpinning for mathematical analysis rather than as an adequate account of economic reality.

One feature of applied economics in the early 1970s, which now shows welcome signs of abating, was an excessive preoccupation with the long run and steady state solutions rather than with the messier, but more realistic, problems of adjustment of disequilibria in the short to medium term.

Doctrinaire economists bear considerable responsibility for some extreme and misguided policies--such as the wholesale relaxation of banking controls in the United Kingdom at a most inopportune moment; or the adoption of stringent monetary policies, aimed at securing a very marked deceleration of the rate of inflation precisely when the repercussions of the oil price increase, in some countries associated with the effects of a previous marked depreciation of the exchange rate, were making the realization of that goal extraordinarily costly in terms of economic dislocation, unemployment and reduced investment. Hardly less damaging was the tendency of other advisors to cling to the Phillips curve fallacy and the notion that the rate of wage increase was primarily determined by the degree of excess demand for labor, and their use of this philosophy in support of "fine tuning" the level of real demand in the economy. (That is to say a policy of varying the real volume of public expenditure, with little or no constraint on the nominal expenditures involved, and with little attention to the effects of this procedure in generating cost pressures.)

Rapid shifts of fashion and focus in economics--prompted partly by demands for "newness" of ideas in academic journals--and the replacement of economic advisers of one school of ideas by other of the opposite camp when governments changed, have contributed to intensify shifts in policy during the last decade. They have also greatly added to the confusion of the general public and electorates concerning economic questions. As a result politicians are not called upon to explain the likely economic consequences of their programs; and a feeling that anything--or nothing--is possible in the realm of economic policy has impeded informed discussions of the issues.