

THE ECONOMICS OF NATIONAL DEFENCE

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by

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INTRODUCTION

One of the greatest problems to-day concerning this country and most other nations of the world is the possibility of another war. Never before has the world been so preoccupied with war during a time of comparative peace. As a result many questions arise--questions which require a detailed knowledge of the place of war in a world at peace--questions which have, so far, not been satisfactorily answered. It is our purpose in a study of the economic aspects of national defence, to note some of these problems and to promote further understanding of this important phase of national activity.

National defence has really a dual objective: to prevent war, if possible, and to provide for adequate protective measures if war should occur in spite of preventive measures. Because of the uncertainty of peace, both of these objectives must be pursued simultaneously. Thus, in considering the economics of national defence, we shall deal with those economic actions of a nation which tend to further the cause of peace along with those which tend to build up a greater national war potential.

The investigation is not to be a detailed one of any particular phase, for the object is not to provide a mass of statistical data on comparative expenditures nor a detailed treatment in logistics. These tasks can be handled with much more success by specialists in the respective fields. Our function is to provide the essential basic background

against which these problems may be viewed. We shall also attempt to adapt any general conclusions to Canada in an attempt to see what general defence policies it might be advisable for her to follow.

The analysis of defence preparations is carried on under the assumption that the nation is preparing to defend itself rather than to be an aggressor. However, once a war commences, these two positions become indistinguishable and, therefore, much of the analysis in this regard could equally well be labelled the economics of war. Many actual wartime measures and policies are discussed, for only if they are fully understood will we be able to lay plans to prepare for them ahead of time.

The social and political variables, and the human element all enter so distinctly into any war or peace analysis that it is impossible to leave them out and present a purely economic picture. Indeed, a purely economic picture would have little meaning. However, in keeping with the title these factors, especially the political one, are reduced in importance as much as seems reasonable.

The treatment begins with a general survey of the factors essential to a war potential. This is followed in Chapter II by an analysis of the primary economic causes of war and what can be done to alleviate them. A summary treatment of the costs of war concludes the chapter. The following two chapters are devoted to a consideration of what can be accomplished before and during a war, by government policy and individual action, to strengthen the economy against attack and, at the same time, maintain a reasonable balance between defence and regular, consumer expenditures. The fiscal controls and other policies of government are discussed in Chapter III, while Chapter IV deals with

production potential. The final chapter is a conclusion in which we try to summarize what we have found to be the important questions in our economy to-day with regard to defence and what possible solutions there may be to them.

CHAPTER I

THE BASIC ELEMENTS OF A WAR POTENTIAL

If we are going to discuss a nation's defence intelligently, it is necessary to have a true conception of just what the economic requirements of modern war are. No defense plan is adequate which does not consider the basic factors necessary to effectively prosecute a war and how the resources of the nation would measure up to the need in an emergency. There has already been a great deal of writing on this particular aspect of war economics, but because of its importance, it is necessary to investigate it quite carefully before proceeding with a more specific analysis.

Prince Eugene of Savoy once said that the three major requirements of war are money, money, and more money. To-day, however, a country requires in a general sense, aside from strategic necessities, a trained, efficient and fairly large populace; a highly developed industrial system; an adequate supply of the raw materials needed in mechanized war; and organizational experience. A detailed survey of these needs and the means of satisfying them is what we will undertake in this chapter.

In considering population, the size, the distribution by age, sex and occupation, the mental and the manual skill all are important in determining the potential strength of a nation.

When we speak of raw materials, we include such things as

minerals, metallic and non-metallic, as well as food and other products of the soil. The importance of available substitutes for those raw materials which are lacking can not be over estimated, since no country possesses all the raw materials necessary in modern war.

The true industrial potential of a nation is the composite result of the facilities of production, distribution, transportation, and finance. A shortage of any of the factors of production (land, labour, capital, or entrepreneurship) will seriously affect this potential. Similarly, if difficulties develop in the transportation and distribution of goods or in the general financial structure of the economy, then the nation is in for trouble in time of war.

The geography of a country is another factor in war potential that we will consider here and which will come up again when we touch on the causes of war, in the next chapter.

All these factors are of no use, however, unless the nation has the "know-how" and the experience, the psychological desire and power, to weld these requirements into a fighting force which obtains the maximum defense potential possible, for the least possible expenditure, in time of peace and the maximum war effort, with the least possible delay, in time of actual or imminent conflict.

We will now look at each one of these factors in detail.

Population or Manpower

Obviously the most basically important of all resources for national defence is the people who live in the nation. It is the actions of men which originate wars and presents the necessity of

preparing for them. It is the manpower which carries on these wars. A nation can have virtually nothing else but people and still survive, yet the greatest industrial nation in the world would disappear in an instant if there was no manpower present to make use of its potential. The age of the mechanical man is not yet here. Thus manpower in its dual role as the perpetrator of war as well as a participant, is the most essential factor necessary in considering a war or defense policy.

In early times the size of the population was of primary importance. Men fought with their own weapons, and the more there were to fight the better chance there was of winning. This is true to-day, too, assuming equality of weapons and skills, an assumption which, we shall see, assumes away a major problem. The emphasis placed on the size of population is shown in our own times by the practices to encourage population growth in Germany, Italy, and Japan--such as marriage loans, large-family benefits and bachelor taxes--which were inspired, at least partly, by the military preparedness idea. From this viewpoint one might question the motives for Canada's Family Allowance!

But even in medieval times the whole population did not fight. The women and children and the very old stayed at home. To nomadic groups they were a retardment of mobility; in more modern times they are a segment of the population which has to be provided for, war or no war. This does not present any strategic problem unless the proportion of those who are to be protected varies between nations. The ordinary working force of males between fifteen and forty-nine years of age includes the chief providers and protectors of a community. The relative size of this force to the population is one of the chief factors in

determining the strength of the nation. To-day the importance of the production of the weapons of war makes the demand on this group doubly severe. Thus we may say that, other things being equal, the larger the population, and the larger the percentage males fifteen to forty-nine, the more potent will be the striking force of the nation population-wise. A rough estimate is that this group composes twenty-five per cent of the population, in a normal distribution.¹

Absolute size is the outward appearance of a nations manpower potential. However, more recent wars have demonstrated that there are certain labor reserves from which necessary workers may be obtained, in time of necessity, workers who would not, ordinarily, be available.

1. It is estimated that approximately another twenty-five per cent of the population is made up of women, older men, and older children who can be effectively used in certain types of work to help support the overburdened labor supply.²
2. People who have been unemployed or sub-marginally employed provide one of the most valuable stores of reserve labor.
3. Certain services may be expanded without hurting the war effort (e.g. a doctor can serve more patients).
4. Some nations have used prisoners of war and conquered peoples to augment their labor supply. Foreign labor may be imported. Both of these methods are rather impractical and of little real value because of lack of interest or incentive on the part of the workers, and because of the difficulty in transporting labor in war time.

¹H. Mendershausen, The Economics of War (New York: Prentice-Hall Inc., 1940), p. 13.

²Ibid.

It would be better to carry on the actual trade in the desired goods in some cases.

5. The same argument applies to the use of colonial labor. However colonial soldiers and mercenaries are a direct addition so long as they can be transported to the battleground, since their physical presence is required.
6. Another factor which can add to the potential of a nations limited manpower is the use of labor-saving devices. The problem here, however, is that it takes time to develop these devices and consequently the probable length of the war must be considered. The effectiveness of this measure depends on the actual amount of labor saved. The new device must, in the long run, save substantially more manpower than its development requires.

Having obtained as large a labor force as the available population will allow, we must determine just how this force will be utilized. We will now investigate the need for manpower in the armed forces and industry. The importance of quality as well as quantity is not being overlooked, but it is necessary, first of all, to see what qualities are required.

The large army seems here to stay for a considerable time yet. The demands of the army for equipment are becoming astronomical. Consequently there is a dual demand for the available manpower: for fighting, and for production. The modern soldier requires much more training than his earlier counterpart--this takes time. The high replacement rate in such specialized trades as aircrew and tank crew, where the average combat life is one-third to one-half a year, necessitates a large supply of

high quality manpower. At the same time, the demands of industry for labor increase during wartime, and this is especially true of certain skilled trades.

Thus the present problem is to allocate the available manpower between the armed forces and industry. There is no point in having lots of equipment with no one to use it, or vice versa. Our selection is aided somewhat, at least in the western world, as certain people are physically, or psychologically unable to serve in the armed forces. Also, certain skilled workers are obviously of more use in industry than in the army.

The size of the war and its length determine the importance of this allocation. The size determines the extent to which the measures must be carried out. The length determines whether the opportunity to train workers and the armed forces will be present, and how many can be trained. This is especially important in industry where one must decide whether to concentrate on present production or intellectual development for new weapons.

Thus we can see that war has become a very specialized business. To operate modern weapons requires much training and skill. Consequently, larger standing armies, or else more substantial trained reserves (the latter is effectively what the ancients had in that each man was already qualified for his post in the army) are required. At the same time, the production of the weapons of war requires more workers at home. Trained men, like engineers, are greatly in demand during wartime. These two forces are vying for the labor supply, and both require skilled men. Here is where quality comes in.

The quality of a nation's people depends on: (1) their degree of intelligence, (2) their degree of industrial skill, (3) their general health. Intelligence can be measured by considering the percentage of secondary and higher education in the population.¹ The degree of industrial skill is indicated by the peacetime production of the country. The higher the productivity of the worker, the more men can be released for the army and essential industry. Spiegel says that a specialized country, which is producing those commodities which it is best able to produce, will have more manpower available for military purposes. This would be perfectly true if it were not based on the premise of unrestricted trade, a rather unreal assumption today. Naturally, the greater the degree to which peacetime and wartime occupations correspond, the more efficient will be the transition and the actual war production. The general health of the populace may be indicated by the infant mortality rate.² In general, men have become taller and heavier in North America in the last twenty-five years. Training in sports, as well as proper eating can improve the standard markedly--the example of U.S.S.R. being prominent in this regard.

Political homogeneity of the population is another desirable quality for the successful pursuit of a war and also a defense policy. ". . . a people unanimously supporting the warfare of its government will produce a war effort superior to that of any equally strong but politically divided nation."³

¹H.W. Spiegel, A table for several countries is found in The Economics of Total War (New York: D. Appleton-Century Co. Inc., 1942), p. 56.

²Ibid, p. 54.

³Mendershausen, op. cit., p. 18

Minority groups within a nation can stir up a great deal of trouble, if they so desire. Even colonies can change from an asset to a liability, if they do not concur with the policies of the mother country.

The density of the population in a country is an important consideration also. As compared with thinly populated districts, densely populated areas are; easier to defend against ground attack, more industrialized, more easily mobilized and very vulnerable to air attack.

In summary of this section on population we may say that:

1. Manpower is one of the most necessary of all resources for war or preparation for war.
2. The effective composition, quality, productivity, efficiency, and density of the population of any country are all important when considering its war potential, as is anything that affects these factors.
3. A very considerable problem of organization of available manpower between industry and the armed forces faces a country in time of war.
4. When a country assigns various tasks out before hand so that there are enough people doing everything—that is, the human resources are efficiently allocated—it will be more powerful than any other nation which is not in a similar condition.

We next deal with raw materials and their importance.

Raw Materials

It is obvious that a nation must have a supply of the raw materials that are necessary for the production of the weapons of war. At first glance, it might seem that any nation which had sufficient supplies in peacetime should be able to hold its own during wartime. There are

two main difficulties here, however. Firstly, the resources needed in wartime do not necessarily correspond with those used in peacetime. This is especially true with regard to the quantity of certain materials that are required. Secondly, during peacetime a country is able to trade with reasonable freedom to obtain any essentials she may be lacking. This may become very difficult in time of war, especially if the supply is controlled by the enemy. The importance of this last point is emphasized by the fact that "no nation on the face of the earth has within its boundaries sufficient sources of supply to make possible complete mineral independence."¹ The difference between home production and consumption determines the additional amount of a raw material that is needed. Just what effect on local shortages the modern trend into large economic and strategic unions, like the Atlantic Pact group, will have is not as clear as it might appear. There will always, it seems, be some shortages and distribution is not a simple problem to solve.

It might be advisable to define just what is meant by raw materials. Raw materials consist of basic foodstuffs, like grain and meat, and basic industrial materials obtained mainly by extractive industries.² Metallic, non-metallic, and organic minerals are included in this latter group. The important raw materials vary from time to time but, in any one period, are approximately the same for all countries, allowing at least a partial calculation of their relative potential. Materials may be classified as: (1) strategic—those which a country does not have, (2) critical—those of which a country has only some of, (3) essential—

¹G. A. Roush, Strategic Mineral Supplies (New York: McGraw-Hill Book Co., 1939), p. 1.

²Mendershausen, op. cit., p. 22.

those of which a country has all it needs now; but future developments may move it into class (2) or (1). These terms pretty well measure the accessibility of the raw material with relation to its importance for a nation.

Consequently we can see the need for a sort of national insurance. This would involve obtaining an adequate reserve supply of all resources which fall within the strategic or critical range. During actual wartime, any material of which additional supplies would be useful in the furtherance of the war effort might be classed as critical. Let us look at these resources in more detail.

Foodstuffs.—People must be well fed to maintain their efficiency and morale. The harder people work, the more food they need and, if the food is unsatisfactory, discontent and a fall in production will result. Just what food is expected by the people varies with what they normally have. It would require much less to keep a Chinese happy than an American. The modern trend toward dehydrated food and vitamin pills is very fine in so far as transportation and preparation on the battlefield are concerned. However, there is the psychological revolution at a dinner of vitamin pills and powdered food which must be considered.

It is obvious that a country must have a sufficient food supply at all times. The trouble for some countries arises when their supply of imported food is cut off. Thus, intensive cultivation, during wartime in such countries, may tend to ruin the soil for future use; and the last ditch slaughter of breeding animals can lead to severe shortages later, even if the war is won. Some countries, like Britain and Italy, are not self-sufficient in food because the cost of production

is too high and the land area is not great enough. The first of these factors can be partially overlooked, if necessary, but the second is a definite resource shortage which could force these countries into starvation under an effective blockade.¹

The use of primary rather than secondary foods, along with the development of means of preserving and transporting perishable foods, will enable a nation to use what food resources it has more effectively.

Industrial materials.—As mentioned industrial materials may be broken down into metallic, non-metallic, and organic resources. Those minerals deemed to be important at present include: iron ore, manganese, vanadium, nickel, chromium, aluminium, magnesium, antimony, mercury and platinum.² The length of this list shows the importance of metallic resources. Only Russia and the United States are self-sufficient in both iron and coal, the two main essentials of the important steel industry. A table of the ability of a country to supply its army with goods tends to exaggerate the strength of the smaller countries but is more accurate than a comparison of absolute supplies. Even then, figures obtained are not accurate due to a certain amount of secrecy.

Non-metallic resources like mica, iodine and nitrogen are important. The power resources of oil, coal, and hydro-electric power are also included under this classification. Coal is used in manufacturing and transportation but petroleum products are tending to replace coal in the latter field. Indeed oil might be said to be the most vital single material for a modern war machine, as exemplified by the fact that

¹ Spiegel, op. cit., p. 275. Spiegel also quotes a table of self-sufficiency for various countries in food in 1937.

² Spiegel, op. cit., p. 220, and Mendershausen, op. cit., p. 26.

few countries have oil supplies but almost all possess refineries. Electric power is the main source of energy for industry but, as witnessed in post-war period in Ontario, it takes years of planning to obtain an additional supply. The output of existing plants may be raised, however, by more continuous operation of the equipment, by the netting of output of large areas, by increasing rate of flow of water over the dam, or by the erection of steam plants.

Organic resources such as textiles, jute, and rubber are also important. They lend themselves more easily to synthetic production than do the other classes. The availability of timber is important in this regard. However, certain products, like silk for gunpowder bags, have no satisfactory substitute and can prove to be key resources.

As has already been indicated, the actual raw materials present may be augmented by regeneration or by the use of substitutes. Scrap iron can be used in place of iron ore, and rubber can be reclaimed. Substitutes originate during wartime out of necessity. They are not necessarily lower in quality or higher in price than the original. Indeed, a development like synthetic rubber is actually superior for many uses to the natural product. War tends to give the inventive impetus, and to allow the ordinarily non-economic capital expenditure, for new plants which have allowed many new materials to be developed which otherwise would, perhaps, never have appeared. However, the usual case is that a substitute, if the quality approaches that of the original, is more expensive. Nevertheless, since a poorer quality or a more expensive good may suffice in the absence of the more desirable raw material, the possibility of substitutes should not be overlooked in calculating the

the economic potential of a nation.

The importance of raw materials indicates that a nation must plan to augment and increase the supply of those materials which are strategic or critical so that it will not be at an extreme disadvantage in the event of war. The following is a list of advisable public policies to develop and maintain the required supplies.

1. The collection of information concerning the available supplies, both in the home country and from foreign sources, and the channels through which these supplies are obtainable. A knowledge of the size of military and civilian requirements is also important.
2. Restriction of consumption of strategic materials in non-essential lines is required. Control of distribution, through rationing and priorities, will be necessary with all commodities in short supply. Reduced consumption, in so far as it frees resources which can be used for war purposes, directly or indirectly, is valuable. Reduced investment in non-essential lines accomplishes the same purpose by releasing producer goods for war construction.
3. Conservation avoids the wasting of resources which, one day, may prove invaluable. This may be achieved in some cases again by reducing production of non-essentials.
4. An enlarged peace time production, where feasible, plus a means for rapid increase over normal output as soon as an emergency develops, accomplish the object of increasing production. Here we mean a net increase in production, not an increase in one line at the expense of another. Protectionist tariffs may prove to be more of a handicap, through using up limited resources, than a benefit, through the

establishment of plants which results.

5. Recovery or regeneration of materials may be economically desirable in wartime, when it does not pay in peacetime. Secondary metals are particularly suitable for salvage.
6. Stimulation of substitutes is a worthwhile policy and, as pointed out earlier, once they are mass produced they may prove to be cheaper than the original products. Substitutes, like plastics, usually require factories which are much more vulnerable to air attacks than are raw material sources. From the point of view of the war economy, limits for deficit substitute production are reached when other essential needs begin to suffer.
7. The collection of stockpiles is one of the most obvious means of preparing for war. By building up large reserves of products in actual peacetime use a supply is obtained which may be diverted to war production if necessary without risk of waste. Roush¹ recommends a one to two year supply of all strategic materials and emphasizes that these stocks should be made from foreign supplies, or else there is no net gain.
8. This leads into a stimulation of imports and control of exports. Tariffs, embargoes and export quotas are the weapons used to accomplish the desired control. In this respect it is important to maintain friendly relations with "source" countries, a difficult task when one is trying to obtain as much as possible and give as little as possible in return. Excessive imports in peacetime, with reduced domestic production, may enable larger imports to be obtained

¹Roush, op. cit., p.22.

during wartime, than otherwise would be possible. The conflict between commercial and political interests is what allows the countries who normally would not have enough basic materials to build up a war machine to do so with imported commodities. Commercial interests want to expand their markets and, so far, they have won out. The League of Nations tried to use "sanctions" to cut aggressor nations off from strategic supplies, but political reasons caused this measure to fail.

9. The protection of domestic supplies from the enemy is essential. There is not much point in collecting large reserves if sabotage or air attack destroys them when they are most needed. Enemy invasion of a source of supply could also prove disastrous. The development of blitzkrieg tactic has also made economic defence important.
10. It is also to the advantage of a nation to use military and diplomatic strategy to obtain sources of supply which would not otherwise be available.
11. The converse of the latter two is to destroy the supplies of the enemy and prevent him from obtaining new ones. Blockades, and the coercion of neutrals are common policies in this regard.
12. Under our present system of profit motive and individual demand in the business enterprise economy, production is normally determined by the law of demand and supply, through the price system.¹ This system fails to take into consideration collective benefits. A person contemplating the purchase of two commodities, one of which is direly needed in time of war, does not consider this fact and

¹ Mendershausen, op. cit., pp. 30-34.

purchase that article, so as to increase production potential. Since these collective wants benefit everyone, all should contribute. "For society as a whole, production of a commodity is economically reasonable if the social valuation of output exceeds social costs"¹, where "social" refers to private plus collective benefits. In a case where this is true, and yet private costs exceed private value, subsidization out of collective, or government funds is justified. Thus, government action in implementing plans for the obtaining and allocation of resources is necessary. They will not automatically appear when the need arises.

In concluding this section, we can see that the self-sufficiency of a nation so far as raw materials are concerned is a most desirable, if not completely attainable, end. The time element in utilizing these raw materials in the event of an emergency is even more important, however. It is possible for a country poor in raw materials to defeat an adversary much richer in this respect, in a fast, short war. An abundance of natural resources is of little use to a country, if it can be defeated before its material power can be used with effectiveness. Consequently constant preparedness in the field of raw materials is the best defensive move any rich country, can make. Under such circumstances no poorer country, other things being equal, would dare attack, for its main advantage, surprise, would be non-existent.

In any scheme for utilization of resources, the industrial state of a nation is important also, and it is to an examination of this national resource that we now turn.

¹
Ibid, p.32.

Industrial Potential

One has only to consider the immense quantity of arms and munitions, tanks and planes, and so on that are consumed in just one day of war to realize how important the supply of these materials is to an army. The "blanket tactics" of modern warfare are particularly demanding of military supplies. Almost all of these goods require some, and most a great deal of, manufacturing. Thus, without the industrial plant to produce the required weapons quickly and steadily, the most efficient army is helpless. Indeed a modern war is a war of machines, not heroes, and the chief figure is just as likely to be an engineer or a physicist as a general.¹

In discussing the problems arising in the industrial line we are, perforce, assuming the country possesses a certain amount of industrial plant. Any countries which do not will have few mobilization problems, and, let us hope, no military ones! Naturally, other things being equal, the larger, the more modern, and the more efficient the industrial plant, and the more complete the division of labor, the greater will be the industrial potential. The first task then facing any industrial country is the conversion from a peacetime to a wartime production set up. This must be carried on both rapidly and completely. A later section on industrial preparedness deals with peculiar industrial problems in this important line.

¹C. E. Ayres, "Dependence of War on Economic Organization," Readings in The Economics of War, ed. J. M. Clark, W. H. Hamilton, and H. G. Moulton (Chicago: University of Chicago Press, 1918).

Assuming the technical transformation from producing toy guns to real ones has taken place, the next problem is how to augment production so as to obtain the greatest possible volume of the required products. The result is true industrial war potential. Augmented production can be obtained by: (1) taking up slack in the resources of the economy, (2) transferring resources from less essential to more essential industries, (3) depleting existing capital resources.

Slack takes three forms:¹ (a) unemployment, which is easily dealt with, (b) leisure time, which can be reduced by employing the old, the young, and gentlemen of leisure, and by allowing longer hours for those already working, (c) work stoppages which may be reduced voluntarily or by law. If appeal to patriotism does not achieve the objective in the above cases coercion, along the lines of conscription and government prohibition, may be necessary. Higher taxes, by lowering net income tend, to a certain point, to make people work harder also. The question of longer hours is complicated by the fact that, if they are too long, productivity tends to fall (beyond 8-10 hours in most industries total productivity tends to decline²). One point of interest here, is the drop in employment during the changeover period, a seeming paradox in an hour of crisis!

The transfer of resources from one industry to a more essential one is done on the basis of priorities and registration of workers. The key point is that we must distinguish between an addition and a diversion.

¹A. C. Pigou, The Political Economy of War (London: MacMillan and Co., Ltd. 1940), Chap. III.

²R. A. Lester, Economics of Labor (New York: The MacMillan Co., 1948), p. 349.

The net result of any movement is not measured by the new productivity but by the change in productivity. The change in needs may add some complication to the computation of this factor. Also, there is no point in reducing non-essential industry if agents thus released cannot be used in more essential industries. Skilled labor is an example of this situation.

The depletion of existing capital facilitates greater war effort by several means: (a) a direct confiscation of certain equipment like aircraft for war use may take place--inventories and liquid capital may also be reduced, (b) non-replacement--merely repair--of machinery as it wears out; or even actual sale of machinery, by means of securities, to foreign sources in return for munitions (this latter method is good only when the foreign country thinks that you will win), (c) foreign securities are more liquid than domestic ones and are valuable for the purchase of munitions on the world market, (d) foreign loans may be arranged, depending on the risk. An arbitrary estimate by Pigou¹ is that a diversion of one-half of real income to war purposes can be obtained by these means combined with the reduced personal consumption and investment, dealt with above, under resource conservation. This estimate does not include foreign securities held, or loans which might be possible, because the value of these is difficult to calculate outside of the actual circumstances. Thus, we can increase our available manufactured material by devious means, besides a direct increase in production.

We may distinguish between the sources of "real war fund" which affect the future. The general conclusion is that resources obtained

¹Pigou, op. cit., p. 42.

by using up existing capital or refraining from production of new capital wholly hit the future, while those obtained by diverting resources from current consumption mainly hit the present. In the latter case we must consider the effects upon health and morale of the reduced consumption.

Obviously government control of productive resources is going to be necessary when forty to fifty per cent of the economic effort of a nation is suddenly piped off to war. In a democracy this control must be newly imposed and, logically enough, it follows that the more people do voluntarily the less will have to be imposed, since all controls have ultimately to do with people. This problem is considered later in more detail.

The next thing to consider is the value of scientific development related to production. "The whole curriculum of physical and natural sciences and their applications are each of them fundamentally essential in modern warfare. Almost none could be spared and the war carried on successfully,"¹ Co-operation among all sciences is the keynote and the development of acoustics, photographic map making and wireless signalling are examples of such co-operation. For instance chemistry is used for making poisonous gases, and even the meteorologist can be very important. Such apparently remote tools as the theory of probability are also used. Burgess² sights an artillery shot as an example of the highly complex integration of industrial and human resources necessary in modern war.

On the surface, scientific research develops war instruments and, therefore, constitutes a threat to an aggressor. It also tends to

¹G. K. Burgess, "The Scientific Basis of War Technique," Clark, Hamilton and Moulton, op. cit., p. 108.

²Ibid.

strengthen a nation internally through enriching the nation with peacetime applications and by providing research opportunities. It can easily be seen that any nation which is mechanically minded will have a strategic advantage in mechanized warfare over a nation that is not. There is, however, one important qualification to scientific "know-how" and that is industrial "know-how". The time it takes to transform an idea into actual mass production is to-day virtually as important as the original discovery. As an example of lag, the first successful jet engine, was tested in Germany in 1940 but it was 1943 before jet aircraft appeared in combat, even with what must have been a terrific effort for speedy production. The usual circumstances find the most scientific nation one of the most technically advanced as well.

We have already considered the importance of human resources to a war economy and especially the allocation of these resources. Some writers feel that conscription of the labour force is just as important as conscription of men by the Military. Indeed, many technical and managerial workers can be more effectively employed at their regular job than in the army. Consequently, nations have tended more and more to regulate labor on the home front. For instance, national registration implies compulsory military and industrial employment for all those able. Einzig¹ claims that all workers should be treated as if they were in the army. Management, union, and labor should all bury the hatchet and the government could act as a super-efficient overseer.

Skilled labor is always in great demand in wartime and invariably

¹P. Einzig, Economic Problems of The Next War (London: MacMillan and Co. Ltd., 1939), Chap. III.

in short supply. The long run effect of this is favorable, however, in that it stimulates an increase in skills complimentary to the increase in technology. During wartime, productivity of labor has forces tending to pull it both up and down. Full operation of factories at close to optimum production, speed up, and longer hours, plus patriotism--all tend to increase production. Inferior workers and materials, lower standards, the rise in accident rate due to speed up, longer hours and less food, the psychological reaction to the shortage of houses, poor transportation, and air raids--all tend to slow production down. These latter factors are highly variable but tend to become more important, as the length of the war increases.

Another factor which is important in considering industrial potential is transportation. A country with a good railroad system has the advantage of being able to move raw materials and the finished product where it is wanted when it is wanted. The railway is still one of the major means of transport and plans for repairing track in case of necessity should be made. Defense of rolling stock, bridges and stations is important. Similarly, trucking routes and air fields are vital means of internal transport, and plans for their protection and efficient use are also essential.

Statistics provide a measure of the need for, and the distribution of, the product of industry, as well as indicating the magnitude of the actual production. What materials and human resources are available is also important information. Tab should be kept on losses suffered and replacements should be produced as soon as possible.

In this section little has been said about the actual mechanics

of industry and the economic theory back of the factors of production. These topics can be found adequately dealt with in any elementary book on "peace" economics and, therefore, only the differences between a peacetime and a wartime economy have been considered. Emphasis has been placed upon the importance and effect of increased production along a few strategic lines. Peculiar problems of technological change, transportation, government control, and labor have also been discussed.

Geography and Strategy

One national resource which is frequently not mentioned, perhaps because of the inability to do anything about it, is geographical position.¹ There are few better weapons for defence than a mountain pass, as found in northern India or Tibet, or the tropical rains of many equatorial countries. Land forms and climate are two of the most important factors in defence, as well as in the everyday life of a country. Mountain ranges supply valuable strategic ores. Water features determine the amount of hydro-electric power, the kind of soil, and the type of agriculture present. A coastline may or may not be ideal for harbours, and access to the ocean is strategic for both attack and retreat. The fact that Britain is an island has saved her many times from invasion, but it is her position beside the European hotbed that has caused the threats to occur in the first place. The general lack of "bumps" in the geographic shape of the country may or may not be a help in defence but space or area certainly is, as Russia has found on two historic occasions. It can easily be seen that any war strategist or defence planner must consider all the geological formations, climatic conditions, water

¹G. T. Renner, Global Geography (New York: T.Y. Crowell Co., 1945), Chap. XXVI.

features, and the general geographic position of the country. Although relatively fixed, some may be altered (e.g. artificial harbours may be built along with irrigation projects). A thorough knowledge of geographic features is necessary to make full use of their potential strength or, if necessary, allow for obvious weakness.¹

The strategic importance of colonies might also be considered under this heading. Besides providing a reservoir of labor and raw materials, they also provide a place to fight either the original engagement or final resistance. Indeed a friendly country might be said to accomplish approximately this same purpose, and hence the support and strengthening of friendly nations is a worthwhile move in strategic warfare. The Atlantic Pact is a modern realization of this fact.

The strategy of war is commonly supposed to be mainly tied up with the geographic situation. Upon examination we find, however, that the military strategist, as well as requiring this information, must manage to get enough supplies distributed in the right places. As we have seen earlier, strategy also requires that the enemy's supplies be destroyed. Indeed, this is the best method; consequently the old idiom "attack is the best defence" still applies, when a country is actually at war. An excellent intelligence service is required to bring back information on enemy productive plans so appropriate counter-measures can be taken and so that effort will not be needlessly expended in preparing for improbable eventualities. Thus, even the actual military war is governed largely by economic considerations, economic in the sense of

¹The recent military exercises in the Canadian north, especially Exercise Sweetbriar have shown the importance of a detailed on the spot knowledge of geographical conditions so that equipment and strategy may be developed accordingly.

resources. This slight digression into strategy serves only to show the far reaching effects of economic factors in war, as well as in peace. It is the actual organization of all these factors into a fighting force that really counts however, and it is to this knotty problem that we now turn.

Organization

So far we have considered only material resources (human, physical, industrial, geographic), but even in this material consideration it has been impossible to avoid mention of "know-how" spirit, efficiency, patriotism, organization, or whatever term you wish to use. Thus much of the required organization has already been dealt with in scattered sections. It remains here to gather these stray factors together, even at the risk of repetition, to re-emphasize their importance. As an example of this importance it is pointed out that in 1917 the north eastern states of the United States, if involved in a conflict with the rest of North America, would have won!¹ This feat would be accomplished not only because of the actual industrial plants and physical output which were available there, but also because of the presence of the "know-how" and organization necessary to obtain and maintain that output.

Under modern conditions, war, becomes a problem of organizing a nation with a certain amount of resources, and a limited number of men, in such a manner, as to bring to realization the full strength of the nation.² A highly organized war economy is, in effect, one big enterprise

¹J. R. Findlay, "Industrial Energy as a Military Weapon," Clark, Hamilton and Moulton, op. cit., pp. 118-120.

²E. Ayres, "Dependence of War on Economic Organization," ibid., pp. 99-102.

with the government as an overseer.¹ Inflation, war profiteering, disadvantageous social changes, and postwar repercussions are all results of poor organization of the war economy and, therefore, poor government management. The position of the government as the chief organizer is difficult, to say the least, but it should attempt to keep the following points in mind.

1. The nature and the size of the war determine, to a large extent, how much material is necessary and how to obtain it. A small scale battle is not much trouble. It is the competitive battle of equals that is most destructive and most difficult. Enemy forces must be not only matched but overmatched. A difficulty is finding a surplus which can be moved without completely upsetting the economy.
2. The people must be induced to do with themselves and their possessions what best fits into the total plan. In a country of free people this transition to severe control is difficult, especially in forming a new military force. The appeal must therefore be well done.
3. A problem of concentration also evolves-concentration at the point where it is most effective in opposing the enemy or in causing him to dissipate his forces in the wrong direction. For instance, submarines can wreak great havoc with relatively little loss of resources. An interesting problem is raised here if calculations should go astray and all one phase of the economy, say shipping, is lost. The government must discover these weak links and allow for them. This economic strategy of war is perhaps the most difficult governmental problem.

¹A. Basch, The New Economic Warfare (New York: Columbia University Press, 1941), Chap. 11.

4. Another consideration is that it takes time to organize. Preparations must be begun a long time in advance of the time when they will be necessary. The relative size of the army has increased. Its dependence on the worker has increased. More replacement, more transportation, more of everything is needed. Thus planning is very necessary, planning before the war.
5. Labor and industry must be induced to forget their differences and produce without interruption. Industrial combinations by restricting trade may in that way prove to be a good idea after all. Bounties and tariffs need to be arranged so as to give protection to war industries for, " . . . if the aim of economic policy lies in the optimum preparation for war conditions, . . . unprofitable industries may very well be tolerated".¹ The problem of adjusting to war an industrial system which was built up with no such end in view is not easy. Inventive genius, too, must somehow be given extra drive.
6. The organizer is largely responsible for the morale of the people and propaganda is one of the chief weapons in this respect. However propaganda can go only so far. The people must intrinsically feel that they personally have something at stake in the battle. The more they feel the thing which is threatened, the longer they will continue to fight under adverse conditions. The important thing to remember is that conviction controls the vast majority of people, and it is the people who actually fight the war, on all fronts.

There are many more problems which arise in an economy which is providing for the eventuality of war. All the solved problems of a peaceful economy must be altered to allow for defense planning in addition to the fact that, in itself, war entails problems of immense proportions.

¹Mendershausen, op. cit., p.33.

Consequently the above list can be no more than an indication of the range that problems may take. The country that will win the war, and have the best chance of winning the peace, is the one that can solve these problems most effectively so as to combine the various resources of the economy into a hard-hitting, fighting force, the cutting edge of the industrial machine, without endangering its own life blood through weakening the supply system. To-day what we must remember is that, "the game is played on the farm and in the factory; the armies merely tally the score."¹ We might also add that the quarter-back on this team is the person, or government if you will, who distributes the forces and calls the plays. Upon him depend the chances of victory.

War and Defense

We have seen the necessities required when a country is actually in a state of war. The problems are many, varied, and difficult. There is however one simplification. The country is at war and the main social aim is the successful prosecution of the war. The more total the war is the more other things are forced into a position secondary to war requirements. If we accept the statement that, "the economics of war has become a social science dealing with the economic problems that government and citizens have to solve co-operatively when a nation becomes involved in war,"² then the economics of national defence may be said to cover the same ground except that it is also concerned with the problems long before the nation is actually at war.

¹ E. Ayres, op. cit., p. 102.

² Mendershausen, op. cit., p. 4.

The addition of the word "before" greatly complicates the problem in any society and especially in a democracy. Somehow people can not seem to get very enthusiastic about preparing for a nebulous war at the sacrifice of a large part of their income. Rationing, priorities, regulations, "guns instead of butter",--all are inconveniences put up with when absolutely necessary but which people refuse, with varying degrees of vehemence depending on their political tendencies, to put up with in time of peace.

The problem then becomes that of not only trying to prepare a country for war, but also of maintaining a certain standard of goods and services for the people, in time of peace. Of what use is a war to preserve peace, and freedom, and enterprise (to use the western phraseology) if the peace, and freedom, and enterprise, are filled up with preparations to preserve themselves in the next war? Under the actual exigencies of war this problem may be overlooked, but not when a country is at peace. If wars become too frequent and are too burdensome for the "ordinary man", which implies that the burden carries over into peacetime life, then he is not going to partake in a war; he has nothing to gain by winning, nothing to lose by defeat. To him the outcome is a matter of indifference. This may seem to be an exaggerated case to some people but one must remember that man's scale of values varies between individuals. Some can see no reason important enough to justify war, others would rather perpetrate a world conflict than surrender one grain of sand to an aggressor. The more severe the trials of war preparation, the more people will be inclined to feel it is not worth while. Obviously, a delicate balance must be struck. This balance will be different for all countries.

It can also be easily seen that the periods of transition from war to peace, and peace to war are going to be difficult. Indeed these are perhaps the most upsetting periods of the economy. The postwar period, important though it is, does not come within the realm of defence, however, beyond the possible effects on pre-war and wartime policies. It should be realized, however, that there can be little planning for postwar problems, other than on paper, before the war is won. The war is the thing, to paraphrase Shakespeare, until it is won. The study of this reverse transition is a topic in itself and cannot be dealt with adequately in this treatise.

Thus, having noted the resource problem facing a nation in its national defence, along with the effects of peacetime attitudes and transitional difficulties in a general manner, we can go on to consider particular difficulties and policies with the ultimate view of applying them to Canada's economy to-day.

CHAPTER II

THE CAUSES AND COSTS OF WAR

The Causes of War

In the last fifty years serious writers have shown great concern over the causes of war. Two world shaking conflicts have added much practical material to their arguments, and two salient factors have come forth. Firstly, writers do not agree on what the main causes of war are, and secondly, they do not agree on the best way to overcome these causes or, indeed, whether they can be overcome, short of the perfection of mankind. In this section we will consider the various conditions which tend to culminate in war, emphasizing the economic causes which have been advanced. The factors which tend to prevent war will also be mentioned, and certain suggestions as to how the overall situation might be improved will be considered. The purpose of this examination may be summarized as follows: "Only by attempting to analyse and understand the causes of conflicts among nations may we work intelligently to end wars and chart a course for our nation and other nations that will lead to a better and saner international order."¹ The beneficial implications of such an international situation for national defence are obvious.

Factors for War.—The non-economic or political and social causes of war may be briefly discussed first. The root cause of inter-

¹H.O. Lathrop, "Causes of Conflicts Among Nations," Renner, op. cit., p.581.

national conflict is the political organization of the world, especially Europe. "If the different national governments are free to do anything, there is a strong probability that, with the best will in the world on the part of the majority, from time to time error or sinister interest will result in policies leading to disharmony".¹ This is especially true since political boundaries do not coincide with economic and ethnic divisions. However, while it is one thing to criticise the present political structure, it is quite another thing to be able to correct it.

War is the principal cause of war in another opinion. "When I say the principal cause of war is war itself, I mean that the aim for which war is judged worth while is most often something which itself affects military power,"² is Hawtrey's conclusion. That is, where wars are fought, material ends are not as important as strategic ends particularly since, as we shall see, there is usually no material gain. Military power gained in one war makes it easier to win the next is the strategic attitude.

Angell³ cites the Boer and Spanish-American wars as results of the psychological desire of nations to fight--to play at war. This factor is evident in modern times in the strange fascination war seems to have for people: the press dramatizes it, and some individuals follow the results as if it were merely a gigantic football game, unless personal

¹L. Robbins, The Economic Causes of War (London: J. Cape, 1939), p.100.

²G. H. Hawtrey, Economic Aspects of Sovereignty (London: Longmans Green & Co., 1930), p. 107.

³N. Angell, The Great Illusion 1933 (New York: Putnam's, 1933), Chap. XII.

disaster seems imminent. One of the chief by-products of the highly competitive spirit of recent western civilization seems to have been bigger, better, and more exciting wars. Personal ambitions of leaders like Napoleon and Mussolini have also tended to perpetuate and glorify national conflict.

National honour and religious intolerance seem to have disappeared as outward causes of war although the former is still used, especially in South America, to justify the occasional small scale invasion. The prevailing method of religious intolerance is illustrated by the activities of Russia and the late Nazi Germany in lands under their control. Cultural intolerance may, however, become one of the more important sources of friction as the East and the West are brought closer and closer together by a "shrinking" world. Overdeveloped nationalism and the belief in race superiority have also caused a great deal of trouble. In such conflicts of religion, ideas and culture, "the adherent is devoted to a religion, a political party, or a race instead of a country. But the conflict is none the less in terms of power and power, including economic power, is the indispensable means to success."¹ For wars of religion arose when the church was a political structure; wars of ideas represent attempts to extend new ideas by force of conquest; wars of nationality are conflicts of rival cultures which would not arise if one nation was not trying to force its culture on another. Consequently wars are conflicts of power, "and power depends on resources."² Thus Hawtrey concludes these latter social causes are ultimately related back to economic grounds.

¹Hawtrey, op. cit., p. 122.

²Ibid., p. 120.

Another main social source of conflict put forward, really closely associated with the group above, is the question of human rights. "Nations do not fight for money or interest, they fight for their rights or what they believe to be their rights, particularly the most elementary of all rights, the right to existence, the right of a population to bread and a decent livelihood."¹ War thus becomes a conflict not between socially obvious right and wrong but between two views of a given right. This concept would explain the main difficulty in reconciling national differences short of war.

Thus, we can see several non-economic factors tending to bring about a world conflict: political divisions, strategic considerations, a sadistic desire for war, cultural, religious, and ideological clashes, and the desire to protect human rights. The extent to which these are basically economic factors or are the result of an imperfect human nature is by no means clear. The important thing for defence policy is that we see them for what they are, causes of war, and do what is possible to alleviate or combat them.

Many writers feel with Hawtrey that the main causes of war are economic, entirely or fundamentally. This is probably true, at least for those causes which seem more amenable to possible solution.

To say that the reasons for world conflict are economics may imply that some one gains economically from these conflicts. However, there seems to be general agreement that, "if the calculation has to be made not on the moral but on the material plane, it is difficult to conceive of a case under modern conditions where the gain in material welfare promised by a serious war would be an adequate equivalent for the sac-

¹Ibid.

rifices."¹ In view of this we may say it is not in the interests of the majority in a nation to fight since collective benefits would be negative. Thus, if economic gains are to be the motive for war, it must be that certain individuals gain at the expense of others.²

In view of this fact charges have been made against certain groups as war mongers. Departments of foreign affairs and military cliques have been singled out as contributing to unrest. If the threat of war is to be used as a diplomatic weapon a nation must be prepared to carry out the threat when the bluff is called. Armament industries have also been subject to this accusation, especially with regard to their international collaboration. It is felt that through their desire to sell arms they encourage international suspicion and, indirectly, sow the seeds of conflict. Marx claimed imperialism to be the cause, and Laski raises his cry against the financiers who, he feels, cause wars to protect their own interests. They may go to war: (1) to force investment upon a country (2) to enforce repayments of a loan (3) to defeat an investment rival.³ Thus the export of domestic capital causes all the trouble and consequently a means must be found to keep it at home to be employed, " . . . in building houses for the working classes . . . instead of an extra palace for a [foreign] bankrupt ruler."⁴ The only answer to the imperialistic threat, Laski feels, is socialism. On the

¹Hawtrey, op. cit., p. 105.

²In this way the situation is comparable to pari-mutuel gambling.

³Spiegel, op. cit., p. 19.

⁴H. J. Laski, "The Economic Foundations of Peace," The Intelligent Way to Prevent War, L. S. Woolf. (London: Gollancz Ltd., 1933), p. 517.

other hand it is pointed out¹ that the case of activities in finance or investment causing wars proves to be the exception rather than the rule. If finance capital has been anything it has been the instrument rather than the impulse.

However, no such group of individuals, regardless of their importance, could alone cause a world conflict. There are economic gains which a nation as a whole feels it will acquire and to which we will now turn our attention. Robbins² claims that the attainment or conservation of power is the ultimate end of conflicts and that economic factors are merely the means to that end. But he appears to return to the control of resources, or the economic means, as the end of power. However, regardless of whether economic factors are the means or the end, the concept of power is important in considering the causes of war.

The idea of power also enters into the explanation of the "balance of power" concept advanced by Hawtrey "Under the rule of force the strong grows stronger and the weak weaker."³ The tendency towards one world power which this law implies is offset by the banding together of weaker nations to form a "balance of power" with the stronger. This complex balance is always being upset through the continual economic advance or decay of the member nations. Yet, these tendencies which are ordinarily classed as political are often, beneath the surface, predominantly economic, because of the intimate relation between wealth and power.⁴

¹Robbins, op. cit., Chap. IV.

²Ibid.

³Hawtrey, op. cit., p. 116.

⁴Ibid., p. 120.

Every conflict of power depends on resources. Thus we arrive at the inescapable conclusion that the competition of peoples and nations to possess and control natural resources, or the goods produced from natural resources, is one of the basic causes of recurrent wars.

These economic motives and considerations will exceed all others, so long as people do not have their basic needs. For instance, a growing nation needs more space for its increasing population. Soil is needed for growing food; minerals are essential and unevenly distributed. Thus competition for land develops. The point here is that there are not enough minerals to go around; what is really required, therefore, is free equality of access. All nations desire ocean frontage and rights to fish in certain productive parts of the sea. However, these, too, are jealously guarded privileges. Protective tariffs lead to war and the prospects of future wars is the principal reason, other than selfish class interests, for continuing a protective tariff.¹ The mercantilist fallacy, that a country can become self-sufficient on the import side and remain active on the export side, has obvious dangers but still appears in contemporary international trade. In this respect tariffs, embargoes, export quotas, immigration and emigration laws--everything which restricts international traffic in any way--may be classed as a potential cause of war. The chaos that would be present under contemporary policy if all the states in the United States were autonomous is an obvious example.

In the past, one of the most common ways of solving the problems of resources was the acquisition of colonies. However, late-comer nations

¹Clark, Hamilton and Moulton, op. cit., p.3.

got only the left overs and, as a result, have become quite resentful. The present attitude of the "have" nations appears to be that, while there may not be much to be gained directly by a restrictionist imperialism, there may be much to lose from the restrictionist policies of other powers.¹ To illustrate this fact we can imagine the different reactions of colony holding nations on being asked to give up their colonies, firstly to an impartial arbitrator and secondly, to an antagonistic power. Thus, "unless some equitable method of administration of undeveloped lands can be worked out and unless national ambitions are held in check by some outside force, there seems little likelihood that colonial conquests are at an end."²

The economic causes of conflict may be summed up in the idea of competition for resources. This competition may be the result of: differences between political and economic divisions, the influence of aggressive, selfish groups, a desire for power, or a combination of these influences. A change in the relative positions of the countries after the war is the objective sought, as absolute gain seems improbable. Is war the best or only means to obtain such a redistribution of wealth and economic power? Certainly it is not a satisfactory means. We hope it is not the only one.

In recapitulating our discussion on both the social and economic causes we may say that, "the main forces making for war in the successive historical epochs consist in general, of conflicts of interest, material or ideal, actual or traditional."³ History denies the fundamental value

¹Robbins, op. cit., p. 77.

²Renner, op. cit., p. 591.

³Alvin Johnson, "War", Encyclopedia of the Social Sciences, ed. E.R.A. Seligman, and A. Johnson. (New York: Macmillan & Co., 1935), XV, p. 341.

of natural belligerency and ambitions of leaders as being the main forces making for war. Because of the changing world, it must be assumed that future wars will conform to a pattern yet unknown. But regardless of its form, scarcely anyone regards war under modern conditions as a force making for progress in civilization. Consequently, the return of an ethical basis to justify war was essential. Therefore, the declared and actual purposes of war often may be at wide variances, further confusing the actual causes. We may go on to say that war results when two more or less equal countries have reached an impasse in the pursuit of their objectives and one cannot proceed without overcoming the resistance of the other. Economic objectives are an important and often predominant part of these overall objectives. Why the impasse is reached is the fundamental question which we have attempted to answer but in which the human element is the imponderable which prevents precise conclusions. The best we can do in a defence program is try to alleviate some of the obvious sources of friction until a point is reached where war does not occur. Lack of understanding due to differences in language and history is sometimes overlooked but is nevertheless a large impediment to such a program.

Factors for Peace.—The imposing array of causes of war, and the apparent lack of simple causal relationships along with two recent world wars, may preclude optimism concerning the prospects of peace. However, "We now see it is irrelevant and unworthy to fight about religion: we could just as readily see that it is irrelevant and self-defeating to fight about our nationalism."¹ The difficulty remains, however, that

¹Angell, op. cit., p. 226.

while no majority of the citizens of one state wishes to pursue aggressive warfare, many nations fear that others do, and therefore they feel that defensive measures are necessary for self-protection.

The military approach to ensure peace is to have more powerful armed forces than the potential enemy. This obviously cannot apply in fact to both potential opponents. However, since an attacking nation usually needs a considerably more powerful force, because of its strategically more disadvantageous position, equality of armament would ensure peace except for one factor; several nations may band together to oppose a common enemy whom their combined might could easily overpower. The result would then be to upset the balance of power. Another difficulty is that, to-day, peacetime industry is war potential, in addition to more nominal armament plants, so that some countries are far ahead of others before the armament race starts. War will also be much easier to provoke if everybody is prepared for the event.

There are, however, certain groups in the world which strive for peace. The attitude of the churches is that the loss in human values is too great to justify resort to war for any material reason. Socialists have opposed war, and preparation for war, at various times for various reasons, a recent example being in the United States before World War II.¹ Other minority groups, like conscientious objectors, also strive for world peace. Just how powerful these forces are is impossible to judge. Education of the people to the actual loss incurred by war is another important factor in preventing it, and the press is one of the best ways of undertaking this project. Sir Esme Howard² has aptly concluded that

¹D. Allen, "The Peace Movement Moves Left," The Annals of the American Academy of Political and Social Science, CLXXV, September 1934, pp. 154-155.

²Sir E. Howard, "The Way Toward Peace," op. cit., CXIV July 1924, pp. 132-134.

peace is maintained only by love or fear; either love of one's neighbour or fear of the consequences of war.

Let us now turn to economic factors which encourage peace. The main factor which deters nations from engaging freely and regularly in war is the economic cost of war. We have stated that war does not pay in a material way, and a summary of costs later in the chapter will bring this out even more strongly. Peace is broken for gain and it seems logical to assume that, when everyone sees that net gain by war is impossible, war will cease. Also, the maintenance of reasonably full employment and security helps to reduce the psychological environment which leads to an individual desire for war as an escape.

Thus, if each nation was composed of a contented and enlightened populace, and nations were reasonable in their relations with each other, peace would be assured. Having noted what can, and what should be done to accomplish certain conditions for peace within a nation, we may examine international regulation as the only possible means, at the present time, to ensure international co-operation.

The general idea of international regulation is that the common interests of all nations should be supported by laws and regulations, just as the personal interests within a nation are protected by police. The main distinction is that, in this case, the criminals are international groups or interests, or individual nations. The friction over the distribution of raw materials and essential goods would be avoided by the wise and benevolent international body which would ensure to everyone access to all physical resources. Free trade would be advocated and world education would be undertaken. That such a union is feasible once

it can be set up is shown by the co-operation of peoples of different nationalities, religions, cultures and languages in Canada, Switzerland and the United States. Obviously the relationship would have to be a rather flexible one due to the differences mentioned above, but the experience of the British Commonwealth of Nations seems to illustrate the possibility of overcoming the additional problem of spacial separation. The most important thing is that human rights must be recognized universally if world union is to become reality.

This seems to be a feasible ideal and it seems reasonable to expect it to work. The first concrete result in this line was the League of Nations whose failure, due mainly perhaps to lack of universal enthusiasm, is a study in itself. A world court was set up under it, but difficulties were encountered in codifying law and giving arbitration which was consistently effective. The latest experiment is the United Nations which has set up groups to study, and correct where possible, international economic problems, such as tariffs and international financing. A basic difficulty here seems to be that economics is an evolving science and, even with co-operation, the settlement of problems is not easy. However, jealously guarded sovereignty appears in the General Assembly and committees with discouraging force and regularity. The main trouble seems to arise from lack of co-operation between the Russian block and the West. Does this mean the world has divided into two armed camps which will have one great conflict and then form a world state, assuming there is a world left? Is it still after all to be a situation of different ideas of human rights and different cultures which each is so sure is right and each is so intent on "allowing" the other to share? Or will

the world stop short of conflict this time? Are costs really too high? Will one side give in, as the lesser of two evils? Will both ideologies live in harmony after testing each other's strength? Only time can answer these questions but it seems logical and prudent to assume the worst, and consequently the need for a study of the economics of national defence is still present, to-day.

We have come to only a few general conclusions of the causes of, and the remedies for war because there are very few. Each case is bound up in its own environment almost completely. H.G. Wells¹ states there is no reconciliation between anarchy and a world state which will lead to peace. It would unfortunately appear that we have not yet reached the world state level and, although international regulation has not failed entirely, it is still necessary for a nation to depend primarily on itself and its allies for war protection and prevention. The new era of enlightenment does not appear to be here yet, although progress is being made. History would seem to indicate that present armament programs will result in another war. Perhaps it will be the last; there seems to be no other rallying call that will raise much enthusiasm, and even that cry is becoming one of hollow mockery.

The Costs of War

The reason for a study of war costs perhaps needs clarifying. We must know how much wars cost to show firstly, whether or not they are worth while and secondly, how much it is feasible to spend on defence to avoid war. The previous section suggested that wars are not worth while,

¹Laski, op. cit., p. 533.

economically or socially. We must here supply the facts to support this stand and to show the extent of the loss.

One does not need a comprehensive background in economic theory to realize that war is a very costly undertaking. If a large part of the economy is diverted to producing goods which are soon destroyed in battle, it is obvious that there will not be the same amount of desirable consumer goods available as there would be, had the effort required to produce war goods been used to satisfy the peaceful needs of the people. The waste in killed and wounded men, destroyed capital equipment and social unrest is equally obvious. The cost to the world of the economic conflict which goes on between wars can also be labelled a war cost.

These costs of war fall logically into two divisions, the economic and the non-economic. Economic or material losses can be replaced in time but it is difficult to recover from the social effects of a war, effects which may last for decades or even alter the whole course of history, economic as well as social. Indeed, the non-economic costs and results of war may, in the final analysis, prove to be the more important consequences, and therefore our brief treatment is not to be taken as an attempt to underrate this aspect.

Before we go any further it is advisable to clear up one or two points regarding definitions. The actual costs of a war should include the cost of factors that are a part of the regular defence expenditure. Some writers disagree with this argument, but it is apparent that if there were no wars there would be no costs in preparation for such an eventuality. It must be realized, however, that there is a difference between war and defence costs, and because of our special interest in the latter

we shall try to distinguish between them. We must also distinguish between real and monetary costs, and real and monetary expenditures. The real costs are equivalent to the things done without, and real expenditures are the actual factors used in the conflict. These both must of course come within the possibilities of available resources. Money costs and money expenditures are merely the measures of real costs and real expenditures. Money costs and real costs may not hit the same person. The individual who pays the money cost does without some real good—a sort of negative contribution—while the actual producer of the real good shoulders the task of making the positive contribution to the war effort. The relation between real expenditure and money expenditure may vary due to a change in the value of the monetary unit. Increased monetary expense does not mean increased real expense. Thus government extravagance does not increase the real cost of the war, it merely transfers resources to one set of people at the expense of another. This shows the danger of using a monetary measure as an indication of real costs or expenditures. Monetary costs are merely an accounting measure of what some individuals owe other individuals in the country and what countries owe each other, since all did not contribute an equal, real amount to the prosecution of the war. This burden is subsequently distributed more equitably by taxation or international payments.¹

Much has been written concerning the costs of war: it is sufficient here to note the main types of costs and to indicate, as far as possible, the costs of the first and second World Wars to the world and to Canada, as an indication of the size which war expenditures may assume.

¹ See Chap. III for detail on financing.

This raises a rather potent difficulty. As mentioned previously, many of the social costs of war cannot be measured at all. Some economic costs cannot be accurately measured in terms of money either. Indeed, the only reasonably accurate figures that can be obtained are those concerning government monetary expenditures and human casualties.

The point is then that, while we may talk about the costs of war in a general sense, as soon as we become particular to the point of saying, "The cost of this was so much," we are treading on very thin grounds—to a certain extent even if we know the exact monetary expense.¹

Economic Costs.—Let us now consider the economic costs in detail. The first and most obvious economic cost is the loss in manpower. A particular age and sex group absorbs the brunt of combat losses and this affects later generations as well as the present one. "The more direct effects of war on population growth can be measured if accurate data on war losses, birth, and civilian deaths are available for the war period. The indirect effects of war on population growth must always remain matters of opinion."² Thus war has the direct effect of reducing the actual number of the most productive class of workers through death and injury, and increases disease rate, both at home and at the front. Succeeding generations are characterized by both reduced health and reduced numbers, the net result being a smaller and weaker population. Also, we cannot

¹In Table 1, page 54 we see the results of capitalization of all economic types of losses in World War I but the results are of rather doubtful value.

²W.S. Thompson, Population Problems (3d. ed.; New York: McGraw Hill, 1942), p. 44.

possibly know what a genius, lost as a result of the war, might have contributed to the economic or social advance of society.

In so far as man hours are expended in fighting or in the production of war goods instead of consumer goods or less leisure time, there is also a loss. Increased laboring time in the factories may mean that workers will "burn themselves out" and in the end contribute fewer hours to society in the long run. But we have shown enough to make our point, that war does cause a loss in present and future manpower and, since the most efficient workers are lost, a more than proportional reduction in desirable consumer goods. The extent of this loss economically varies to some extent with the marginal productivity of the workers. Thus in an overpopulated region the economic loss would be less severe.

War also uses up many essential natural resources both in producing war goods and through the destruction of sources of supply. Losses of ships, strategic metals, power resources, and raw materials are very high. Capital goods like railroads, factories, and houses are destroyed. This does not mean that the capacity of the world to produce does not increase, but merely that it does not increase as much as it would, were there no war.

International trade is affected by war. Any equilibrium that may have been present is upset because all countries are not influenced equally. The result is international chaos; exchange systems are disrupted and monetary inflation and deflation take place in different countries in varying degrees. The tendency is to try to escape international dependence by the erection of tariff barriers, even before the war. Huge gifts and loans seem to be the latest device to facilitate exchange

during these difficult periods. International exchange is complicated enough when all is well but when the normal system of checks and balances is violently upset, under the exigencies of war, it is only natural that adjustments, if not a complete reorganization, will be necessary.

With the increasing interrelationship between national economies, the combatants are not the only ones affected by this disruption. Neutrals are forced to undergo trade embargoes, "accidental" losses of their ships, and other similar difficulties. They must also maintain a guardian army, at what may be considerable expense, in case they too are attacked. Switzerland is perhaps one of the best examples of a neutral whose economic position was made less favorable by wars with which she had nothing whatever to do.

Rehabilitation, war relief, care of the wounded, pensions, and other lasting costs place a further burden on the people. The conversion and reconversion of industry is also an expensive task. A large national debt, accumulated during the war and payable to foreign countries, may have a depressing effect after the war. Thus these few examples indicate that war costs tend to carry on, even after the war is long over.

There are some other less obvious economic effects of a war as well. We have seen that government control during wartime is essential. This has led to the tendency of governments to keep some of that control upon the return to peace. The presence of control and planning, both during war and afterwards, may be regarded as a cost or a benefit depending upon the degree of one's socialistic leanings.

The composite result of the upset caused by war in both the domestic and international economies is, some writers feel, a tendency

towards depression. At least, it tends to accentuate the upswing and the downswing so that the depression, if not caused directly by the war, is at least made more severe by it. One reason put forward is that war interferes with economic planning.¹ How can we calculate a loss such as this with any degree of accuracy?

There are, however, several economic means by which a country may offset to a slight extent the high apparent war costs. "A disaster which does not cripple the machinery of production, of an extent which spurs people to increased efforts . . . , coupled with a credit system and an industrial system each of which has some unused capacity for expansion, these conditions enable a disaster to be self-repairing, in part at least, through stimulus to productive activity."² Scientific progress, improved industrial processes, population shifts, expansion in raw material and food outputs, the development of substitutes, and transportation and communication advances are all inspired by wartime experience. To the extent which these factors create a new benefit to the people, they are a gain from war and must be deducted from the costs. Another gain is the increase in business ability and enterprise developed under stress. This aspect is rather nebulous, however, and is just as likely to be disadvantageous if a tendency toward monopoly develops because of this increased power of business executives.

Many fallacious arguments have been advanced in considering

¹F.G. Dickinson, "The Price of War", The Annals of the American Academy of Political and Social Science, CLXXV, September 1934, p. 166, and J.M. Clark, The Costs of World War I to the American People (New Haven: Yale University Press, 1931), p. 278.

²Clark, op. cit., p. 84.

benefits of war. The position that war creates more money and therefore is good is an obvious confusion of money and wealth. Similarly, the increased demand for destroyed goods does not mean more wealth but merely higher prices due to a reduction in real wealth. Increased employment for war purposes, contrary to public opinion, gives no net profit but falls in the same category as shovelling snow--an example of the "make-work" fallacy. All these factors might be said to accomplish is a redistribution of the wealth in the community and this redistribution may or may not be in a desirable direction. Also international transfers of booty, territory, and so on are not net gains, although they may benefit one nation at the expense of another.

Before we give some statistics it is necessary to add a further word of caution. The distinction between real costs and expenditures has already been made.¹ We must also remember that some expenditures are merely transfers and others are used for productive purposes, like railroads which may continue to serve after the war is over. The effect of the depreciation of the monetary unit during a war also tends to exaggerate costs shown in a government budget. Indeed, this is said to account for one half the monetary cost of the first World War.² These financial discrepancies have, of course, no effect upon the real costs. International comparisons must be weighed carefully, for exchange rates may be only nominal and thus relative monetary and real costs may be widely different among the various nations. Also, some figures include defence costs and costs of previously unemployed agents of production, while others in-

¹ See pages 46, 47, and 48.

² E. R. A. Seligman, "What Do We Mean by War Costs," Clark, Hamilton and Moulton, op. cit., p. 541.

clude only one or neither. The most valid figure would appear to include both of these costs. Evidence of the interrelation of all these factors is seen in the varying cost figures given for what is apparently the same thing. Consequently, the following figures should not be taken as extremely accurate. They give a general picture and no more.

Let us first consider some figures on population losses.

TABLE 1.
LOSS OF LIFE IN THE 19th CENTURY WARS^a
AND WORLD WARS I AND II

Wars	Dead
Napoleonic, 1790-1815	2,100,000
Crimean, 1854-1856	785,000
Prussian-Danish, 1864.	3,500
Prussian-Austrian, 1866.	45,000
American Civil, 1861-1865.	700,000
Franco-Prussian, 1870-1871	184,000
English-Boer, 1899-1902.	9,800
Russian-Japanese, 1904-1905.	160,000
Balkan, 1912-1913.	462,000
Total--19 th Century Wars.	4,449,300
World War I, 1914-1918	9,998,771 ^b
World War II, 1939-1945.	22,060,000 ^c

Sources: ^aE. L. Bogart, Direct and Indirect Costs of the Great World War (New York: Oxford University Press, 1919), p. 270.

^bThe World Almanac and Book of Facts 1949 (New York: World Telegram, 1949), p. 326 gives the figure as 8,538,315 killed.

^cIbid.

From Table 1 it can be seen that population losses for World War I were twice those of all the wars during the previous hundred and twenty years, and that the losses in World War II were twice as large again. The total killed and wounded in World War I varies between thirty-five and thirty-eight million, about two per cent of the world population or seven per cent of the population of Europe and Russia.

For World War II this figure is fifty-six million, not including the war in China.¹ According to Table 2 Canada lost fewer men in World War II than in World War I, the reasons being largely strategic.

TABLE 2
CANADIAN CASUALTIES IN WORLD WARS I AND II

	World War I ^a	World War II ^b
Killed	60,383	41,992
Wounded	155,799	53,145
Total Casualties . .	216,172	95,137

Sources: ^aBogart, *op. cit.*, p. 272.

^bThe Department of National Defence, *Canada's Defence* (Ottawa: Department of National Defence, 1947), p. 4.

The monetary value of the losses in World War I are given in Table 3. The figures are arrived at through an arbitrary means of estimating, when the value could not otherwise be measured. It must be emphasized that no attempt has been made to incorporate social loss. Only the economic aspects of the constituent items were considered. The values are perhaps reasonable, although they possibly err on the conservative side.

Official sources in Washington and a survey made by the American University in Washington put the total military cost of World War II, to all belligerents, at over a trillion dollars (\$1,116,991,463,084), or six times the direct costs of World War I.² Property damage is placed at

¹World Almanac and Book of Facts 1949, op. cit., p. 326.

²World Almanac and Book of Facts 1949, op. cit., p. 317.

two hundred and thirty billion dollars, or about six times the corresponding figure for World War I.¹ Thus we may say that the overall economic cost of World War II was at least six times that of World War I in monetary terms. The price level rise accounts for only a certain portion of this increase.

TABLE 3

DIRECT AND INDIRECT COSTS OF WORLD WAR I^a

Total direct costs, net	\$186,333,637,097
Indirect costs	
Capitalized value of human life	
soldiers . . .	\$ 33,551,276,280
civilians. . .	33,551,276,280
Property losses	
on land . . .	29,960,000,000
shipping and cargo . . .	6,800,000,000
Loss of production	45,000,000,000
War relief . . .	1,000,000,000
Loss to neutrals	<u>1,750,000,000</u>
	\$151,612,542,560
Total Indirect costs	<u>151,612,542,560</u>
Total direct and indirect costs	<u>\$337,946,179,657</u>

Source: ^aBogart, op. cit., p. 299.

Thus costs have gone up; doubled in manpower and, allowing for price changes, at least tripled in respect to real goods. A picture of costs as compared with national income shows that, during the early stages of World War II, twenty-five per cent of the national income of Russia, Germany, Japan and Italy was expended for war purposes and this would seem to be a fair figure for all combatants.²

¹
Ibid.

²M. Newcomer, "Financing National Defence in Russia and the Axis Powers", The Annals of the American Academy of Political and Social Science, CCXIV, March 1941.

By comparing government expenditures in Canada during the two wars, it would appear that World War II cost Canada about ten times as much, in money figures as World War I, (\$17,843,000,000¹ as opposed to \$1,665,000,000²). In 1944, for example, about eighty-eight per cent of the budget was for war and demobilization, the biggest compensating reduction occurring in capital expenditures. In fairness, however, it should be again pointed out that productive methods have been improved, and new materials have been discovered. Transportation and communication advances made during the war mean that no longer can countries be remote and unknown by other nations. At the same time, upsets in relative productive capacity have created a necessity for new trade channels, one of the more lingering costs of the war. Canada particularly is affected by this trade situation, as well as by her newly found industrial might.

From all the above figures we can see; firstly, that war is a very expensive business and secondly, it is becoming more expensive all the time in terms of both real goods and the factors of production, the most important of which is manpower. Wars have not paid in the past and, if the present trend keeps up, will pay even less in the future.

Non-economic or Social Costs.—The physical effect on the people of increased disease, massacres, a decline in the rate of population growth and actual war casualties has social as well as economic repercussions. Families are broken up, many losing their source of income.

¹Bogart, op. cit., p. 157.

²The Dominion Bureau of Statistics, Canada Year Book, 1948-9, Ottawa: The Kings Printer, 1949), p. 973.

The young men, who make up the bulk of those lost, are socially as well as economically the most useful. The employment of children in war plants arrests their training and development, in effect suspending the cultural advance of the nation.

The psychological effect of this sacrifice of spiritual and cultural ideals for material ends, which are wasted in combat, is also significant. The hate, misery and frustration due to forced labor, concentration camps, continual travelling and the lack of any control by the individual over his destiny causes immeasurable personal damage. Do people who have been through such an ordeal regard war as worth while, even if they are not any worse off financially at the end? Such horrors under present total war are no longer applicable only to troops; they affect whole populations and nations. Consider the mental wear caused by air raids, not only from fear but also due to the necessity of living in a tunnel and otherwise completely rearranging the ordinary way of life.

Also, there is the effect of war on the standard of morals. The result is a reduction in the value of human life and a subsequent reduction in respect for the rights of others. An increase in crime following a war seems to indicate such a movement of moral standards from the general to the particular. Thus war changes the ideals as well as the elements of life of a people.

We can see then that war, as well as adversely affecting the material welfare of the individual, may also influence his living habits, his morals, and even the type of government he has. The extent to which these non-material results occur is, of course, impossible to say absolutely, but that they are present and that they do constitute a considerable

threat to cultural advance, the main hope for a peaceful world, can certainly not be overlooked.

Defence Costs.—So far we have shown the costs of actual war and have not included the costs of defence between wars. Naturally, if a war develops, the costs of defence are really costs of war to the extent that the goods and services on which defence expenditures were made are used in the war. But if war is prevented, or if the number of wars is reduced by defence expenditures, then they cannot be classed as direct war costs since they serve the exact opposite purpose, the promotion of peace. The term peace insurance costs might be more applicable to these defence expenses.

The social or non-economic consequences are not as important in this case, except to the extent that preparation for war interferes with the normal way of life of the individual or lowers the standard of living. The more intense the defence program and the greater the per capita expense, the more of a burden it will be. It is only under a dictatorial type of government, however, that restrictions become so severe as to have a marked effect upon the everyday lives of the people.

The economic costs of an anticipated or possible war may be sizable. "Defence . . . is of much more importance than opulence," said Adam Smith.¹ The question we are faced with is, how much more important? "Economic Analysis cannot yield an answer to the question of whether or not the benefits from a program of military preparedness are worth their cost."² However, "if the same degree of military preparedness

¹Speigel, op. cit., title page.

²R. S. Schickele and G. Everett, "The Economic Implications of Universal Military Training", The Annals of the American Society of Political and Social Science, CXXLI, September 1945, p. 102.

can be achieved by different routes the element of economic cost may indeed become the decisive factor."¹

Let us first of all discover what the actual costs are. We may distinguish between direct and indirect costs, a distinction which will become clearer with some examples.

The most obvious direct cost of a defence program is the upkeep of the armed forces. The most productive men are withdrawn from industry for any military program whether it be a large, short term, conscript force or a smaller, permanent force. Thus the opportunity cost of the total manpower employed in the armed forces---the cost measured in terms of the goods and services which could otherwise have been produced by the men engaged in the military program---is accentuated. The normal peacetime expenditure on national defence in Britain during the inter-war period was about four per cent of the national income.² Using this as a measure, and looking at the cost of paying members of the armed forces and equipping them in the light of the low average income per family, the nature of the sacrifice is evident. A large portion of surplus income, under such conditions, goes for the support of the armed forces. Thus we have, in effect, a double direct cost. Production is reduced by the transfer of certain men from industry to the armed forces and then a substantial amount of the reduced, consumer good production is diverted to equip these men with articles they would not otherwise have needed, (guns aircraft and the like).

But, claim some exponents of a defence army, this is not all net cost; unemployment is reduced and men are educated and acquire health and

¹Ibid.

²Pigou, op. cit., p.8.

stamina. There are, however, more useful ways of reducing unemployment. There is no doubt that, as a general rule, training in the armed forces is not as beneficial for peacetime production as training in industry, and there are much better and more efficient ways of improving the health and stamina of the nation's young men than putting them in the Army, temporarily or permanently. All these secondary ends may be attained by better means. What is desired is a defence force and for that reason military effectiveness should be the basis of allocating any defence expenditures, nothing else.

Indirect costs of a defence program are also important.

. . . any interference with the free play of the economic forces designed, not to make good some failure on the part of those forces to promote economic welfare, but to forward a non-economic end, will, in one way or another, direct resources from more to less productive channels, and so will make the country somewhat less well-off than it would have been if the claims of defence had been silent.¹

Each country lacks different industrial resources as we have seen. The more essential the industry the more valid is economic subsidization in peacetime to prepare for the eventuality of war. In the long run, however, by forcing a definite change in the industrial pattern, the factors of production used in less favorable types of production for war insurance are taken away from more profitable industries and not from surplus. "Whatever expansion the stimulated industries undergo is at the expense not of the idle reserve but of employment in other industries."² This seems to effectively refute the idea that defence expenditures by increasing demand will increase employment, in the long run. However, it is quite conceivable that in the short run employment might be increased.

¹ Pigou, op. cit., pp. 11-12.

² Ibid, p. 17.

The difficulty is that the multiplier of such a demand would be small due to the tendency of the increase in activity in defence industries to be offset by a decrease elsewhere, and due to the fact that a relatively small amount of the expenditure would reach the individual consumer level since the government does most of the purchasing, and industries, if they are exclusively defence industries, will tend to re-invest and expand rather than pay higher wages. Thus, as an anti-depression movement defence expenditures may give the initial start but they have little multiplier influence and, unless the rate of expenditures on defence is increasing, have no recurring effect in a upswing.

We have seen that maintaining an army and fostering important industries in peacetime both cost a great deal, in terms of real income. What do we get in return? Although the ultimate decision as to what method if any will be used as a defence measure is made on the basis of complex political diplomacy, the economist can point out the costs and benefits and at least draw an economic conclusion as to the worth of the relative methods.

Firstly, what good is a large trained fighting force? The main claim for the existence of such an organization is that there will be no time to train men after war is declared. A large reserve may be valuable but their training is limited and partially outdated and they will require refresher courses. This seems to defeat the purpose of immediate action, as it matters little, if the war can be lost in a week, that the armed forces can be ready in a month instead of six months. Thus, from an economic point of view based on strategic considerations, a smaller professional force would appear to give more for the money.

There is no point in having one section of the war arm ahead of the other, however. The industrial machine will take time to convert. Stockpiling is difficult because of the rapid rate at which equipment becomes obsolescent; continual replacement is very expensive. The best plan would seem to be to concentrate on the efficiency of the worker, getting new techniques into operation, ensuring management-labor-government co-operation, avoiding unemployment waste, and drawing up plans as far as possible for a complete change-over in time of war. The stimulating effect of war must not be overlooked either. Both the army and industry using newest techniques, can do a better job, faster, during the pressure of war than during peacetime. Consequently, the fundamental delay may come not from the lack of trained men for the armed services but from the lack of weapons for them to use. Balance is the most important of all defence preparations and the resultant problem of timing is so complex that military and industrial experts are the only people who could attempt to solve it.

In discussing how to get alternative expenditures in defence it might be worth while to consider what Lord Boyd Orr stated on receipt of the 1949 Nobel Peace prize. He felt that if one-hundredth part of the money being used for war preparation was given to the specialized agencies of the United Nations obstacles to world peace would vanish.¹ It would seem on the basis of the probable costs of the next war that such a gamble would certainly be worth while even if the chance of success was infinitesimal.

¹Hamilton Spectator, Dec. 13, 1949.

In the final analysis as to what defence policy, if any, to pursue, Pigou's insurance analogy seems to come closest to the answer. "What insurance premium a prudent man will pay to safeguard himself against any evil depends on the complex comparison of the effectiveness of the insurance offered, of the chance that the evil he wished to guard against will occur, and of the amount of injury he will suffer if it does occur."¹ The relative balance of these factors in a given situation determines what definite sacrifice the man will make. Similarly with a nation. "In a world liable to war it may not only happen, but it may be wise, for a country to sacrifice something of opulence in normal times in order to protect itself against a shortage of food or other essential goods should war break out."² In conclusion we may say, definitely, only that any expenditures on defence short of what would otherwise be spent on war is an economic and social saving.³ This in effect would mean to some people that any expenditure of material wealth which will avoid war is worth while.

¹Pigou, op. cit., p. 17.

²Pigou, op. cit., p. 18.

³Again the municipal police system forms a parallel where a certain small expense is assumed to avoid more substantial losses due to lack of law enforcement.

CHAPTER III

GOVERNMENT POLICY FOR WAR

We have dealt, in general terms, with the economic resources required for defense and with the causes and costs of war. However, the economics of national defence, as is the case with all economic studies, can not be couched in general terms, when it is taken from the realm of pure theory to that of applied theory based on past experience and the situation at the time of writing. True, we would become more abstract and continue our discussion on the theoretical plane. Judging from the results of previous efforts this would seem only to conceal the problem and leave the reader intellectually inspired, perhaps, but still completely in the dark as to the significance and application of this, the most applicable of subjects. Consequently, from this point on we shall tend to stress practical application at the expense of pure theory.

The limitation of space places two further restrictions on the scope of our consideration. In our applied study the discussion is limited to Canada, and to the experience of the period of preparation before, and during, World War II. Thus any general principles which we may derive are subject to these limitations of scope and time.

To sum up the plan; we shall consider each particular aspect of national defence, and, drawing from recent history in these aspects, try to arrive at a general view of what the best policy for Canada to pursue would be, considering to-day's technological and, to a lesser extent,

political situation.

This present chapter deals with the policy of the government, and, due to the complete interweaving of such phases as price control with both taxation and rationing, both monetary and supplementary, non-monetary controls are dealt with together. In the next chapter we shall conclude our study with an elaboration upon the phase of industrial mobilization mentioned in Chapter I together with a few comments concerning the significance of labour and international industrial co-operation, from a defence point of view.

Financial Policy

"War finance deals with the collection and disbursements of funds used in the maintenance of armed forces in peace time; with the mobilization of financial resources in war time; and with the financing of requisite measures during the period of transition from war to peace conditions."¹

During peacetime expenditures for war are merely one item in the national budget. The size of this item varies with the international political situation but it always remains of limited magnitude. If defence expenditures are large, it may mean that the taxpayer has to forgo a new car or some equally desirable, non-essential article, but beyond that expenditures for war purposes do not affect the financial plans of the individual or the government. The important consideration in peacetime is the distribution of the relatively small appropriation for defence purposes. Nevertheless, it is essential that a planned financial policy be available in the event of a national emergency so that it may instantly be implemented. Finance is only of secondary importance in the prosecution of a war; it is the quantity of real goods available that is important.

¹G. Colin, "War Finance", Encyclopedia of the Social Sciences, ed. E.R.A. Seligman and A. Johnson. (New York: Macmillan and Co., 1935), XV, 347.

However, in so far as an intelligent financial policy induces efficiency into the economy and equalizes the burden between the various groups, a definite plan is desirable.

Consequently we will consider in detail the advisable methods of financing a war by the national government. It is obvious that the general policies of governmental finance of any aspect of the national economy are applicable to war finance. Thus only brief mention of the more important principles will be given and the discussion will be limited, as far as possible, to the peculiar problems of finance in time of war. Everything that is said with regard to war finance and its desirable form is equally true of the peacetime financing of defence although, in the latter case, such drastic measures are not usually necessary.

Having set down the limitations and explained the approach we may proceed to observe the actual mechanics of financing a war. The first object is to establish definitely the place and importance of financial policy in the prosecution of a war.

In the old days preparedness for conflict largely depended upon the size of the war chest possessed by the king. With funds in hand he induced the service of mercenary legions and procured the necessary supplies in foreign as well as domestic markets. Under such circumstances money appeared the very essence of military strength.¹

However, to-day, as we have seen, the totality of war makes domestic and even foreign purchases impossible unless the goods and services are available. In this respect we must remember that:

While the service performed by money is a secondary or intermediate one it is none the less important that war be financed on sound principles; for ill-conceived financial methods may delay the mobilization of industry, impair the effectiveness of the entire economic organization and cause the grossest injustice as between different classes of people.²

¹Clark, Hamilton and Moulton, op. cit. p. 380.

²Ibid.

The importance of war finance is further shown in the fact that often, in peacetime, military outlays account for the largest single item in public expenditures, and, even at that, expenditures under purely military headings do not tell the full story by any means.

If war finance is so important why are there basically conflicting views as to the best financial policy to follow? First consider the problem of finance in wartime. The government expenditures increase greatly and the money to pay for the goods bought must be obtained from the people. At the same time the method of obtaining the funds must not reduce production and must equalize the burden as much as possible. Thus war finance problems are just one aspect of the problems of; industrial mobilization, production and consumption, prices and incomes, and control of the capital market. Naturally, the relative weight of all these factors will vary from economy to economy, and in each economy at different times. This variation in relative importance is one of the causes of disagreement and confusion among the exponents of various theories of war finance.

Before proceeding it is advisable to indicate again the shortcomings of any comparative consideration based on monetary figures. Everyone realizes that money is an elastic yardstick but this factor is all too often forgotten. Yet while disbursements of money do not represent the war effort itself, they are apt to measure it; the best measure perhaps being the percentage of the national income spent for war purposes.

There are several possible methods of obtaining money for governmental purposes. This is true for all public projects which require money. The funds may be obtained by; taxation, direct or indirect, compulsory savings, a type of taxation, loans made by the public, loans made by the

banks, or by the issue of new currency. Before dealing with these methods in detail we should consider some basic maxims of taxation;¹

1. A normal government expenditure is financed by taxation. No such measure is financed by a continuous resort to loans.
2. An exceptional expenditure is often financed by loans, especially if it pays for itself. There is disagreement however over how much of a non-renumerative, non-recurrent expenditure should be financed in this manner. Expenditures for war are of this latter type.
3. New taxation should, in any case, pay the interest on a new loan to avoid a steadily increasing taxation pattern.
4. The burden of an exceptional expenditure is borne mainly in the period of the expenditure. The only burdens borne by those other than the warring generation are:
 - a) The costs of building up stocks of equipment and training men entailed before the war, which hit the preceeding generations.
 - b) The reduced inheritance in the form of capital goods and inventories lower the wealth of succeeding generations. Debts incurred to foreign nations during wartime, to be repaid in the future, also reduce the inheritance in so far as they are repaid and not repudiated.²

¹A. C. Pigou, op. cit., Chap. VII.

²If the theory of equilibrium below full employment of resources is accepted, the physical cost of replacement after the war may not be as great as it would seem at first glance, since the resultant rebuilding may keep employment at a high, above-equilibrium level. This raises the question of the worth of full employment, as well as distributional problems, and leaves the realm of war finance.

The only transfer of burden that can take place within the warring generation is between nations themselves. One group or nation may bear more than its share now on the condition that the other group or nation return the favor in the future. Nevertheless, someone bears all the burden now. The problem, in democratic countries at least, is to equalize this burden as much as possible.

Having these factors in mind let us turn our attention to the various methods mentioned for obtaining the funds, remembering that, "to make the wrong choice between taxation, borrowing and inflation may cause us endless sorrow and social disturbance; but it will not lose the war. To set the limits of our war effort too low on the other hand . . . will mean losing the war."¹

Taxation.—Financially speaking immediate taxation is the best way to pay for a war. War causes increased government expenses; taxation is the way money is obtained by the government; therefore, increase taxes. In this way there is a definite and final transfer of purchasing power from the civilians to the government. Individual consumer demand is reduced by an amount equal to the increase in government demand. Consequently, there will be no price rise unless taxes are paid out of savings rather than current income. In so far as taxes make wars unpopular, absorb any excess profit created by war, tend to discourage capital expansion in non-military lines, tend to equalize the sacrifice of taxpayers with that of those in the armed forces, and are made acceptable by patriotic feeling on the part of the people—to that extent taxes are advantageous, fair, and possible.

¹"A Budget of Delusions," The Economist (April 27, 1940), pp. 759-760.

Why then is taxation not used exclusively to finance a war?

There are several reasons, each one of which reduces the scope of taxation possible in a certain direction. These reasons may vary in intensity, and consequently may vary the proportional amount paid in taxes at different times.

1. It takes time to impose a new tax, and for the revenue from the new tax to start coming in. In spite of this delay, large expenditures must be made immediately. This objection to taxation has become less important since the introduction of the collection of income taxes, the chief lagging tax, at the source.
2. High taxation tends to reduce the enterprise of both the individual worker and the entrepreneur. In as much as this occurs, taxation beyond a certain amount will limit the output of real war goods—exactly the opposite end to that desired.
3. The higher the taxation level, the more burdensome it becomes; and, in so far as it is inflexible, the real burden of some people may be relatively very great although, according to the theory of the tax, all burdens should be equal. In other words, the higher the tax the less slack there is for individual cases. Taxes that are too high can, in this way, break down morale and, as a result, even lose the war.

Thus governmental finance has reached the state where the pay-as-you-go plan is implemented as much as possible but, since the cost of war is so great and the above reactions begin to occur before taxation revenues are equal to war expenditures, other methods of war finance are also used.

There are three ways in which the amount of money collected by

taxes may be increased during wartime; normal taxes may be made more severe, new taxes may be imposed to reduce war profits, and new taxes may be imposed to obtain revenue with a minimum of administration and cost. Generally speaking direct taxes are better than indirect ones, since the point where the real burden is falling can more easily be seen and the taxes can then be made more in line with ability to pay. Excess profits taxes are excellent so long as they do not reduce production.

Compulsory savings are a method of taxation whereby part of the tax is refunded after the war. This procedure tends to reduce consumer demand during the war and, at the same time maintain incentive since the money is really being saved. These savings can be released after the war, whenever an increase in consumer demand would be advantageous. The system is especially applicable to low income groups and, indeed, causes the poorer classes to hold a proportionally larger share of the national wealth. However, if voluntary savings are reduced by an equivalent amount there is little to be gained. This was realized in the Canadian plan, as voluntary savings were allowed as exemptions from the compulsory savings section of the income tax. Thus, those forced to save were those who were not saving at all--the very people whom it is desirable to catch.

Changes in the cost of living create a problem which must not be overlooked when taxes are close to or at, their maximum. Different methods of varying taxes automatically with substantial changes in the cost of living have been proposed.¹ Canada avoided the problem during the last war by controlling the cost of living which, as a result, did

¹A. G. Hart, Economic Policy for Rearmament, (Public Policy Pamphlet No. 33), (Chicago: University of Chicago Press, 1940), pp. 22-27.

not rise too substantially until after the war when controls were released. This point, nevertheless, indicates the hand-in-hand relationship between taxes and the price level.

Loans from Individuals.—People prefer to purchase bonds rather than pay taxes for several reasons. Firstly, the bonds may be used as collateral to secure bank credit. The money is not completely lost. Secondly, people tend to ignore the fact that to repay the bonds taxes must go up. Thus, they do not feel as "poor" as they would if they were taxed. Thirdly, if we consider an equal income group, those whose individual circumstances allow them to buy bonds may do so while others who, due to special circumstances, do not have money available can avoid subscribing to a loan. If a heavier tax were imposed the hardship of the latter group might become severe. Thus loans result in less burden for the group as a whole than do taxes.

What is the general effect on the economy as a whole of bond sales to individuals? The desirable decrease in consumption will take place if the funds used to purchase the bonds would otherwise have been used for consumption purposes. The tendency is, however, for investment funds or savings to be transferred to the purchase of bonds. This reduces current investment in both essential and non-essential lines. In the latter instance only, this result is beneficial. Consequently, government action is advisable in limiting investment in non-essential lines, so that investment funds may be used either to finance essential industry or to purchase bonds. In the overall picture, the sale of bonds tends to increase the financing of war out of capital and to decrease the amount financed out of earned income. Also, the expectation of the repayment

of loans by taxation may tend to cause hoarding to meet this eventuality, especially on the part of industry. Thus funds for industrial expansion may be further limited.

Who bears the burden of finance by loans? Since taxes are usually less progressive than loans, the interest payments on bonds tend to benefit the rich more than the poor. That is the rich will invest more in bonds than they would pay in taxes, and in the return on, and the repayment of, this investment, relatively more money is collected from the poor, by means of taxes, than from the rich. The result is a transference of money from the poor to the rich.

All the above factors will occur regardless of any inflationary tendency. However, the ability to use bonds as collateral may increase bank credit and result ultimately in inflation. Similarly, people will feel they have more money to spend if they have savings in bonds, and the propensity to consume will be greater than if taxes had been paid. In so far as inflation does take place the burden falls on those whose income lags behind the rest.

The question is raised here as to whether it would be better for the government to pay a higher interest rate to attract more funds into bonds and perhaps reduce the inflationary pressure. Experience shows that the cost of increased debt financing is greater than the saving experienced in lower commodity prices.¹ High interest rates may cause doubt as to the soundness of the investment especially among foreign investors. Further, it seems ethically unfair to allow bondholders to make a handsome profit out of war.

¹S. E. Harris, Inflation and the American Economy (New York: McGraw-Hill, 1945) p. 245.

In general, the sale of bonds to the public to help finance a war enables the government to obtain a greater quantity of savings than would be the case in the absence of these sales.¹ Since this means that the citizens are not sharing the cost of war equitably, a transfer payment must be made in the future to compensate those who take on more than their share. In the meantime, interest payments are made to these people by the taxpayers. This causes financial troubles for the government after the war, and enables the rentier class to obtain income at the expense of other groups. If the government, in an attempt to counter-balance the latter fact, taxes the holders of bonds according to their holdings they might better have been taxed in the first place. A plan of compulsory bond buying with a fixed portion of income would equalize burden and would be superior to taxes, to the extent that, in an emergency, the bonds could be used as collateral. The inflationary trend here however, might, offset any advantage thus obtained.

If it is decided that the sale of bonds is advisable and necessary, there are several techniques, some of which have already been touched on, which should be utilized to ensure a large sale.

1. Alternative uses of money for consumption must be limited, where possible.
2. Transfers of money from those who have a high propensity to buy bonds to those who have a high propensity to consume, such as investment in in a non-essential industry, should be restricted.
3. Diverse forms of loans, different denominations of bonds, publicity, competitions, drives, and appeals to patriotism are also essential.

For example, lack of publicity for the second Canadian War Loan

¹ Spiegel, op. cit., p. 338.

caused subscriptions to be far below expectations. In this group may also be included psychological schemes, such as the deliberate placing of the objective of a loan lower than the hoped for figure in order to make people feel they have really accomplished something.

4. A suitable interest rate must be set. One too high is not desirable or effective. Often as demand is stimulated and alternative uses are limited the interest rate may even be reduced.¹

Currency Issue and expansion of Bank Credit.—If loans are used, voluntary loans are the most desirable. When sufficient money is not obtained in this manner, however, more subtle means of credit expansion must be used in supplement. Either the issue of more currency or governmental borrowing from the banks may be used to accomplish this end. In so far as the number of transactions increases, and the demand for money to facilitate exchange increases as a result, the issuing of new currency will not have adverse effects or cause a rise in prices. Beyond this point, successive, equal issues of new money bring the government a smaller and smaller percentage of the national income. This makes the issues become larger and larger. Yet, so long as people do not lose confidence in the currency, the purpose of obtaining more of the real output for the war effort is attained.

Similarly, the government by selling its bonds to the banking system may obtain funds. The danger here is that the banking system, using these bonds as reserve, can expand its credit by up to ten times the value of the bonds. The result of such a move would be an increase in consumer demand and inflationary pressure. Also, interest charges would have to be paid to the bank.

¹Harris, op. cit., p. 237.

Nevertheless, these two methods are valuable and justified when there is unemployment of resources; the key point in their use is moderation. For,

. . . . though the creation of new money and bank credits may be a convenient means of meeting war requirements at an early stage, before there has been time to organize an adequate scheme of taxation and public loans, yet the method is inherently bad, and a government at war should restrict it within the narrowest possible limits.¹

A. G. Hart² supports the idea of a "non-interest bearing warrant" which could be used by the government to secure funds. The "non-interest bearing" feature would eliminate the expense, and, although the bonds could be used as legal reserve, the government would be able to control the inflationary effect, if such was desirable, by varying the reserve limit. The method is a little severe on banks as their funds are virtually appropriated by the government. Even under the stress of war, we must guard against arbitrary action and undue exploitation of any one group.

We have mentioned inflation several times in our discussion so far without going into detail as to how it arises in a war economy and what the disadvantages of it are. It might make things clearer to do so. During wartime, production and therefore incomes both rise. The government can tax away the increase in income and use it to buy the increase in production. There is, then, no rise in prices. As soon as the government begins to run a deficit—that is as soon as the government starts taking more goods than its money income will pay for—we find that there is an increased amount of money in the economy, due to more credit or currency issue, and fewer goods in the hands of the people. This tends to increase prices, as proportionally more money to goods is available and

¹ Pigou, op. cit., p. 111.

² Hart, op. cit., p. 25.

consumer competition increases. At the beginning of such an inflation, the velocity of circulation may fall a bit, due to an appeal to patriotic feelings, and ease the pressure in that manner. However, when inflation becomes rapid we find a tendency for the velocity of circulation to increase, since the value of money falls rapidly. This will further increase the inflation and the fall in the value of money. The final result may be a completely worthless currency. What is wrong with that? It means all people who possess monetary assets, or are owed money, lose according to the degree of inflation. Thus, those who hold mortgages, pensions, annuities, insurance, and so on are all penalized and forced to pay more than their share of the war costs, while holders of real assets are no worse off. Furthermore this transfer causes much economic friction and may result in a fall in production. Thus, as a major scheme in war finance, any system which leads to inflation is detrimental to both the real war potential, through a fall in civilian morale, and the fair distribution of the burden of war.

In summary of this general section on financial policy we may say that:

1. Peace time military expenditures generally should be financed out of current revenue.
2. During the exigencies of war, the higher the tax rate the less a government will have to rely on inflationary measures. However, high taxes may have an unfavorable effect on output; some taxes may cause higher prices, and taxes may be paid out of idle balances rather than earned income.
3. The total amount needed by the government is important in determining the ratio that will be raised by taxes and loans. General economic

conditions and the credit situation in the country are also important in this regard.

4. It is important that the people realize the value of savings and the implications of a large demand for a small supply of civilian goods, if any scheme to avoid inflation is to work.
5. Finally we must remember that war finance is merely a tool to get the greatest production for war purposes. While equality of burden is important in an emergency it is more essential that each do "his utmost rather than his share."¹

Canadian experience in the Second World War

We shall now briefly examine the manner in which Canada followed these maxims and fitted them in with her peculiar problems.² After the outbreak of war in September 1939 there was the lull of the "phony" war. For two or three months the costs of conflict were not too large and only moderate increases in excise and income taxes, plus a heavy excess profits tax were felt necessary. As the costs of war and production increased, the taxation structure changed and new taxes were imposed. It is important, in all our considerations of Canadian war policy in the last war, to recall that there was a period of delay or grace in which financial and other matters could be organized.

The objectives of Canadian fiscal policy were; to rapidly attain full use of resources and to follow a pay-as-you-go plan as much as possible. Naturally, equality of burden and restriction of civilian demand were also

¹ Pigou, op. cit., p. 84.

² For a more detailed picture of Canada's problems and solutions of the first two years of the war see: A. F. Plumptre, Mobilizing Canada's Resources for War (Toronto: Macmillan and Co., 1941).

considered. The light burden of taxation, the large available resources, and lack of war destruction were peculiar and helpful conditions in the Canadian situation; but the increasing urgency of the war by 1940, the new problem of deficit financing, and the foreign exchange problem were difficulties which were not anticipated. Indeed, ". . . the financing by Canada of most of the Canadian export surplus with the sterling area was just as great a threat to inflation, for example as the more obvious types of war expenditure."¹ The export surplus meant more purchasing power and fewer goods. In so far as old international debts were paid, and people increased their savings rather than their consumption, this tendency was ameliorated.

The Taxation System. --At the beginning of the war the taxation machinery was poor, especially for corporation taxing, and with regard to the excess consumption taxes and the Dominion-Provincial overlap. Consequently an immediate, large increase in taxation was not possible. Nor was it desirable, in the period of transition, to increase taxation substantially. Soon, however, the system took two main trends; the increase of old taxes and the establishment of new ones. Those increased included:

1. The personal income tax, which contributed one-third of the total revenue as rates were increased and exemptions lowered. The innovation of income tax collections at the source by the employer allowed for fast changes in the rate of tax and ensured collection, besides providing the money for the government's use considerably more rapidly and in a steady flow. This method has been carried over into the peacetime economy and seems here to stay.

¹
J. F. Parkinson, "Some Problems of War Finance in Canada", Canadian Journal of Economic and Political Science, (1940), pp. 400-423.

Compulsory savings were really a part of the personal income tax. The refundable portion (the saving) was heavier in the lower brackets, and exemptions were allowed for personal savings. But by 1944 the income tax had become so high that the compulsory savings feature was dropped. In 1949 the savings were refunded. Thus the mechanism seemed to work satisfactorily, whether or not the purpose of the tax was accomplished.

2. The corporate income tax was increased leniently, by what amounted to a war surtax. The main taxation of corporations was done through the excess profits tax.
3. The sales tax was not appreciably changed because of the ill effects an increase would have had on the lower income groups.
4. Customs and import duties were subject to minor changes with the dual purpose of increasing revenue and conserving foreign exchange.
5. The general policy as regards excise taxes was to avoid those indirect taxes which would unduly raise the cost of the necessities of life and to follow a selective approach in increasing consumption taxes. Many items were affected.

The new taxes brought in were:

1. The excess profits tax, the purpose of which was to prevent the accumulation of war profits and to secure revenue. The main objection raised to this tax was in respect to the base period which, at first, kept industries in the same relative position. After some adjustments, which made the tax more equitable, part of this tax was made refundable to preserve incentive.
2. A national defence tax on personal income which especially reached the lower income group and which later lost its identity in the income

tax.

3. A Dominion inheritance tax was added to the provincial one.
4. Certain taxes were initiated which were designed to conserve essential products and foreign exchange. The idea was to reduce the demand for an imported commodity and thus conserve foreign funds. They applied to a wide range of commodities.
5. A war exchange tax of ten per cent on all imports from non-empire countries was also designed to conserve exchange. Close check was kept to see that the untaxed producers did not increase their prices by the amount of the tax.

Most of the revenue came from personal and corporate taxes. The higher rates on customs and excise taxes yielded a lower revenue. The sales tax brought in more revenue, as did the excess profits tax which also served the purpose in keeping down war profits. Other taxes, designed purely with regard to foreign exchange problems, yielded negligible revenue. In general taxes changed from indirect taxes on consumption and business to ones levied on the basis of ability to pay, on luxuries, and on non-essential goods. The overall burden became much more equitably distributed resulting in increased administrative difficulties because of a necessarily more complicated system. Refundable portions were used to effectively preserve incentive. By the end of the war a comprehensive system of taxation and administration was in effect, and the knowledge gained in implementing it will be invaluable, if such severe taxation again becomes necessary.

Loans from the Public.--This involves persuading the public to save out of their income and lend the savings to the government. Nine public war loans were floated in Canada. The installment system, used

to facilitate the purchase of bonds and certificates, made savings regular and continuous. The plan was aimed particularly at the worker in the lower income groups. As a result, employees held ten per cent of the money value of government loans which, up to April 1943, amounted to 46.3 per cent of the government's receipts. The remaining 53.6 per cent was raised by taxation.¹ The Victory Loans fulfilled the need for a large volume of loans but were not very effective in reducing civilian spending, while the War Savings Certificates produced only eight per cent of the loan total but tended to reduce the spending of civilians to a greater extent. This difference in the quality of the loans decreased as the war progressed. Non-interest bearing certificates were also issued to those who wanted to lend their money without charge, but they were relatively insignificant.

The interest rate was kept at the pre-war level, the result being a fall in the market for government obligations at the outbreak of war. After three or four months, the market returned to the regular level and remained there for the duration. This would seem to indicate rather unfavorable conditions for the financing of initial government expenditures by loans. The increasing degree of institutionalism in Canada makes more and more money readily available to the government from "internal" sources and increased civilian savings. This brings us to our next source of funds.

Loans from the Banks.—The original financing of the war was done by bank credit, and the multiplier effect resulted in increased production, since there were many idle resources. A continuation of such a policy would have meant increased imports from the United States and a rise in

¹V. Miller, Canadian Wartime Fiscal Policies (Unpublished Thesis, McMaster University, 1945), p. 51.

prices, as full employment was reached. Nevertheless, moderate expansion, to take care of the natural growth of production, continued, and borrowing from banks accounted for thirty-five per cent of the rise in debt. Included in this total is some government borrowing from the Bank of Canada for currency issue and for foreign dealings. The main function of the central bank, however, was to maintain a residual store of funds which was kept under strict control. The Bank of Canada was also influential through its open market operations, and, towards the end of the war, in lowering the rediscount rate to signify an easy money policy in order to encourage business to make expansive, postwar plans.

Currency Expansion.—During the war, currency expansion was almost fourfold. The rate of expansion decreased, however, as full employment was reached, the largest expansion taking place in the earlier years of the war. Since bank notes form so small a part of the actual medium of exchange in Canada, such an expansion is not dangerous but merely indicates an increase in demand.

In general inflationary methods of finance, such as currency issue, and bank credit expansion, are more essential when the government is depending on the profit motive to align production. It is apparent that, once controls are organized, a minimum of further reliance on such inflationary methods is necessary. This would seem to indicate that the more highly organized the financial plan for emergency, the less resort to inflationary means of finance will be required, and, as a result, the strain on prices would be eased on the demand side.

From 1939 to 1945 the national debt increased from three to nine billion dollars as the expenditures by the government became as high as the total national income before the war. The debt is ninety-seven per cent

held in Canada, and, consequently, the major task of repayment is between groups in Canadian society, not to repay other countries--a point of light in a gloomy situation. Also, since the rate of interest on government securities has declined since 1945, the transference of wealth will be itself eased slightly. The existence of this large volume of secure government bonds provides a means for the absorption of increased savings. If the increase in the availability of safe investment opportunities reduces the amount of risk capital put forth, the tendency towards over saving and stagnation, which some economists feel is inevitable, may be accelerated rather than offset by the existence of a large national debt.¹

The control of foreign exchange was one of the more unexpected major duties of the government in its fiscal policy program. The Foreign Exchange Control Board was set up primarily to balance, as far as possible, the import and export of United States funds in order to ensure, on one hand, that American funds would be available as required to obtain vital war materials and, on the other, that they should not be dissipated for non-essential purposes. It also functioned to prevent a flight of capital from Canada, to prevent depletion of foreign assets in Canada, to stabilize the rates of exchange, to advise the government on international exchange matters, and to present a powerful front to all other nations which had instigated exchange control. In carrying out these functions it controlled: the acquisition of foreign exchange, the export and import of commodities, the sale of securities, foreign travel, export of capital, and the rates of exchange. The problem of United States dollars was

¹ K. E. Boulding, Economic Analysis (revised edition; New York: Harper, 1948), p. 414.

further alleviated by special agreements, such as the Hyde Park Declaration whereby the United States agreed, in effect, to take payment for exports to Canada by importing large quantities of Canadian goods.

We may say, as a result of her experience in the last war, that Canada, providing she follows similar plans to those used at that time, and providing the period of delay between the declaration of war and the coming to life of the financial system is short, would remain in a sound financial position in the event of another war. Although some minor changes might be necessary, the hinderance of the financial system to the real war potential and the inequality of burden were reduced, as much as possible, in the scheme that was in effect at the cessation of hostilities.

Non-Fiscal Policy

Besides financial action, there are several other methods by which the government can insure the maximum amount of goods in the right places, with as little delay as possible and with a minimum of dislocation, inconvenience and suffering. All the following measures have one or more parts of this composite purpose for an objective. As we found when dealing with financial policy, there is little that can be done in most cases until war is actually declared, or at least clearly imminent. There are, however, one or two points which should be considered in the formulation and carrying out of a peacetime preparation program, and these will be introduced in their proper setting, as we proceed.

The Price System and Price Control. --In our economic order prices are the regulator of economic activity. They determine: (1) the direction and the extent of production, through their reaction on the demand and

supply of the ultimate consumers, (2) the organization of production by allocation between industries and firms and the co-ordination of resources within firms, (3) the distribution of the product by the relative size of wages and consumer good prices. The price system only fulfills these functions in the long run, however, and is geared only to handle small changes. This is why it is not a satisfactory measure, in itself, for wartime purposes; since both speed and large size are characteristic of any war inspired transition.

Price distortion may be caused by: large government purchases on a competitive basis, the expansion of business purchases, speculation in commodities, unco-ordinated government buying, competitive bidding for labor, the expansion of consumer buying power, the expansion of bank credit, or increased rapidity of expenditure of funds.¹ The results of price distortion due to these causes were seen earlier when we discussed inflation, the problems of higher government costs, windfall profits to the entrepreneur, the higher cost of living, upset industrial plans, and undermined morale. These are reasons additional to the fundamental objective for imposing some sort of a control over prices--to secure a maximization of output. Wartime policies are thus designed to supplement the price system with direct economic controls, and, of necessity, some of these controls, like rationing, reach beyond the realm of price fixing. However, in so far as the regular competitive system of prices may partially accomplish this purpose, only limited interference with the price system is necessary. The resulting blend of normal incentives and direct control causes ambiguity in some respects and therefore is the basic source of price control difficulties.

¹ C. O. Hardy, Wartime Control of Prices (Washington: Brookings Institute, 1940), Introduction.

Price fixing, then, is necessary where the supply of goods decreases while demand increases, or to prevent, if heavy taxes keep demand down to supply, some individuals gaining at the expense of others. When a rise in price is caused by a decrease in supply, price control must be accompanied by some means of distributional control, such as rationing, if the article is essential to the consumer. The government, by setting minimum prices, can increase production in one direction and, by setting maximum prices, can restrict production in another direction, when such changes would not otherwise occur. If the government can direct production into the desired lines more efficiently in this manner than industry can, a free price system is neither necessary nor desirable in wartime. Experience seems to indicate that such is the case. That is, in wartime government control can direct production more efficiently than the free price system.

In the transition from a free price system to one interspersed with government price regulation, several difficulties are encountered. When viewing these difficulties listed below, we must meditate on the possibility of relieving them by some actions in peacetime and on whether such actions would be worth while.

1. A quickly established and comprehensive scheme of control can avoid internal repercussions of prices. But changes which are due to external causes, for example, the effect of American prices on Canadian prices, cannot be avoided.
2. If prices are imposed on the basis of costs, then all plants will make a profit, regardless of expenses, and the incentive for greater efficiency is gone. If, however, prices are fixed at the same level for all firms, some may go out of business and others may make a large

profit. The situation can be partially corrected by the use of subsidies which, since they are a sort of negative rise in price, tend to prevent repercussions on other aspects of the economy, and by the use of excess profits taxes.

3. There are many technical difficulties caused by differences in grades of a product, differences in local conditions which tend to vary price, and differences in the amount of processing. In Canada the use of a base period price and standardization in the production of articles like clothing were regulations used to overcome these difficulties.
4. It is also important that prices be fixed all the way down the line from the original producer to the ultimate consumer. This is an administrative difficulty.
5. Free export of goods cannot be allowed if prices at home are to be controlled with effect.
6. The limitation of prices may discourage investment in industries whose profits fluctuate.
7. Bounties and subsidies may have to be used to preserve incentive in some industries when rigid price control is maintained. An opposite effect may be obtained by imposing an excise tax on purchases made by non-essential industries, which effectively raises the price to the non-essential buyer and tends to reduce his purchases.

With regard to peacetime fixing of prices, it would seem to be beneficial, from a preparedness point of view, to establish minimum prices for essential products whose demand is relatively elastic. This would encourage production by guaranteeing a certain profit. If the demand is inelastic, however, a minimum price set below the prevailing price would merely reduce the amount produced and, in the long run, the capacity of

the industry.

Naturally, control of prices means control of wages and if prices rise wages will have to be allowed to rise proportionately. A cost of living bonus is an effective way of accomplishing this end. The difficulty caused by the fact that all product prices do not vary exactly with the cost of living, or with each other, is a rather big obstacle in this regard, however.

One writer¹ points out that price control can last only so long. The longer it is carried on, the more things tend to get out of line, and the greater the strain becomes. If this is coupled with reduced co-operation when the war ends, the result will be a release of controls sooner than might be economically desirable. Canadian experience has shown that controls are impracticable and undesirable as long range policies. Also business rebels against the idea of price control while free competition exists for raw material supplies. We must go all the way or not at all, and, in peacetime, all the way amounts to state planning, a political as much as an economic phenomenon.

Before we leave price control, let us turn for a moment to the Canadian situation.² In Canada a five point program was established in October 1941: (1) an all over price ceiling, (2) wage and salary controls, (3) profit and income controls, including taxes and subsidies, (4) allocation and rationing controls, (5) manpower controls. This shows the all embracing nature of control of which price ceilings form only one part.

¹E. J. S. Spence, Wartime Price Control Policy in Canada, (Ottawa: 1947) A detailed study of the price ceiling throughout the war and immediate post war years.

²Jules Backman, The Price Control and Subsidy Program in Canada (Washington: Brookings Institute, 1943), p. 30. This book gives a clear concise and accurate picture of the general policy that was followed during the last war.

The price ceiling applied to all goods and principal services, with very few exceptions. The main idea was to keep retail prices at a base period level. Allowances were made for normal, seasonal variations in price. The government also supported various types of campaigns designed to reduce costs, conserve scarce factors of production, and maximize essential consumer supply, all of which tended to keep down prices. "The price ceiling itself has been a very powerful incentive towards maximum efficiency in production."¹

Priorities. --Priorities serve to concentrate production on essential goods, without allowing the otherwise necessary rise in the prices of resources and to overcome any disequilibrium distribution caused by fixed prices. To apply priorities a priority order, or a basic schedule of ranks is necessary. This may include non-essential industries depending on the amount of the commodity available. The great difficulties arise when one priority for a finished good requires other priorities all down the line to make production of the original, essential good possible. The problem of which essential good is most essential is also difficult to solve.

Fundamentally, priorities are a short run method of allocating productive resources to ease production bottlenecks until the resources are in better supply. The system is set up to ensure that one plant has not an excess supply of some commodity while another has none. Thus, priorities ration goods among firms. Prohibitions are a form of negative priority, and conservation plans are basically linked up with priorities, along with commandeering practices.

¹K. W. Taylor, "Trends and Consequences of Price Control in Canada", War and Reconstruction, Some Canadian Issues, ed. A. R. M. Lower and J. F. Parkinson. (Toronto: Ryerson Press, 1942), p. 24.

Commandeering.—The Government may actually take over the possession of the goods instead of trying to persuade private interests to run things to the satisfaction of the authorities. This is most likely to occur with raw materials. Productive agents may be forcibly placed where they are the most use, and exports, both visible and invisible, may be substantially reduced. Commandeering is also beneficial in that after the government has taken what it wants, it can facilitate control of the price and distribution pattern of the remainder. An example of this system is the Canadian crown company which was established to deal with imported goods, and which sold those it did not need at reduced prices, rather than have the government pay out a subsidy. One of the main advantages of commandeering procedure, however, is the speed with which it enables needed articles to be obtained.

Requisitioning is a form of commandeering used to avoid delay or exorbitant prices while dealing with the holders of unique resources. The values which are arbitrarily assigned under this scheme should be fair and subject to appeal.

Can priority and commandeering procedures be used to benefit defence preparations during peacetime? In so far as they facilitate stockpiling and enable the development of, for example, military jet aircraft rather than commercial models, such procedures may be warranted. It is obvious, however, that only small scale actions would be possible; for if such restrictions were imposed over a wide field, the price system might be affected, and a multiplying system of control would result, with its subsequent disadvantages.

Rationing.—Because of the large number of individual consumers a priority system, such as that used for industry, is impossible for the

retail market and, therefore, a fixed ration is set. Thus, rationing may be defined as the method used to distribute scarce and essential products to the ultimate consumers. As we have mentioned, in a case of scarcity, if the price is not allowed to rise, demand will far exceed supply and a shortage will result. Hoarding, queuing up, or going without are the accompanying evils. Since rationing assures a future supply, it reduces these evils, for people know that they will get their share.

Some general comments on rationing:

1. The success of rationing depends on co-operation to a very large extent.
2. The type of commodity is also important. The more regularly a commodity is consumed, the easier it is to ration.
3. Rationing may cause shortages of unrationed substitute goods and thus tend to become cumulative in its effect.
4. The importance of different rations for real variations in need should not be overlooked, but the administration of such a system is a real problem.
5. There are several ways of rationing: by quantity, by price, by a system of points, by fixed-date, expiring coupons, by non-expiring coupons, and so on, but the idea of allocating scarce resources, fairly, is basic to all methods.
6. A rationing administration must observe two essential concepts. The ration must be for a fixed amount and the total amount of rations allotted must not exceed the supply on hand. These maxims are more difficult to fulfill for commodities rationed by value rather than by quantity.

During peacetime, rationing would not be feasible except in the case of non-essential commodities, for which rationing is not necessary, anyway. The lack of patriotic incentive and the prospect of a permanent condition of shortage would encourage "black markets" to flourish with great abandon. Nevertheless, the example of Britain in the post-war period would seem to indicate its possible workability, but one must remember that the British are not submitting to rations to build a war machine but to ensure their economic survival. In a country like Canada, where resources are relatively plentiful, rationing would be very difficult indeed to enforce on purely a defence basis, if the need for it should ever arise—which seems unlikely.¹

Subsidies and Bounties.—There is still another method used to control prices and ensure an adequate distribution of scarce resources—one we spoke of earlier; that is the use of bounties or subsidies—payments made to the producer to speed up production. They are best used for widely consumed commodities which are relatively essential, a rise in the price of which would not only upset the price system but also cause hardship among the poorer people. The use of a crown company to implement subsidies has been mentioned, already.²

The possible use of subsidies and bounties to encourage production in certain lines in peacetime for defense purposes will be seen more clearly

¹The Impact of the War on Civilian Consumption in the United Kingdom, United States and Canada, a report of a special combined committee set up by the Combined Production and Resources Board (Washington: U.S. Government Printing Office, September 1945) provides very detailed data on the changes in consumption which were occasioned by the controls instigated in these three countries during the last war.

²p. 32. Also note: n. 1, p. 30.

after the section on industrial preparedness. It is sufficient to say here, that they provide one of the easiest methods for the government to maintain essential industry, without penalizing the consumer of the product of that industry for the preparedness. Instead, all the people pay for the benefit through taxes, which seems to be a more equitable solution. The payment of subsidies is quite flexible, more so than is the case with tariffs for instance, and this is a further reason for their use, since only the immediately essential and most worthy industries are benefited.

The general question of governmental policy goes much beyond the national defence attitude. We have seen that little can actually be done during peacetime to facilitate preparation programs, other than to lay plans and always to consider when implementing peacetime measures their effect upon the defence situation. Public works plans, especially, should be considered with this in mind.¹ For financial and distributional situations which may arise in the future, however, one could expect to be able to do little but lay plans. After all government measures are the flexible tools in our economic system, and the best, overall plan would appear to be to keep them flexible, not necessarily weighted on a wartime basis. The best base for flexibility is planning.

Government operation of industry also fits into the scheme of control. It serves to eliminate waste, inefficiency, and sabotage in essential industries. It is " . . . designed to achieve results which neither the politically possible pecuniary incentives nor the detailed government regulation can obtain from private management."² The big question

¹For instance, a trans-Canada highway, or a ring of airports in the north would be desirable public works which also have considerable military importance.

²Mendershausen, op. cit., p. 150.

is whether government operation of industry actually accomplishes this. The regulation of manpower is also an essential problem. How far should regimentation go? Both the problems of industrial and labor mobilization are so important and so complex that we shall deal with them in a separate chapter.

CHAPTER IV

INDUSTRIAL PREPAREDNESS IN PEACETIME

The problem of industrial preparedness is made up of three main aspects. There is the mechanical problem of having the industrial machinery organized so that the necessary wartime goods may be obtained in a hurry. This is the basic purpose of all industrial peacetime planning on defence grounds. Closely allied to this problem is the question of the international situation with regard to possible alliances for the production of weapons. The third factor we shall consider in this section is the relation of labor to industry. Any program for production mobilization must include in its plans allowances for the peculiar problems of labor, the most important of the factors of production.

Industrial Mobilization

Government Control.—It is apparent that the change from the guiding principles of a peace to those of war economy makes it impossible for private enterprise to make the transition speedily and then carry on, without some degree of comprehensive control. For instance during peacetime a firm will operate at the point of maximum profit, while during wartime maximum output should be the objective. Consequently no one denies that some means of co-ordinating and reorganizing, by means of some controlling body, is necessary. The question here is how much control is necessary and who will exercise it.

There are several alternatives. Public ownership is advanced as a possible solution. Then, the government could run industry exactly as it felt defence needs required. There would be no difficulty in getting individual firms to comply with requests; sufficient co-ordination over the whole industry would be provided. This idea would be particularly applicable to new defence plants, or to sub-marginal firms in an essential industry. Long term public ownership of essential utilities like railroads, telegraph companies, and financial institutions may prove beneficial. Such ownership may be direct or by means of subsidies, the essential factor being that the government be in control. Another proposal, public management, would be advisable during wartime only when government managers knew more about the business than private ones (e.g. armament industry), a situation which would not occur often. Also, a change in key men at such a critical time would be dangerous.

There is little, however, in most industries that an enlightened private management could not carry on equally as well as, if not better than, the government, provided they see the need. Industry wide co-ordination would perhaps be an advisable government control, but otherwise co-operation with and planning with the heads of private industry would provide just as efficient an arrangement as government ownership. Control which infringes on the fewest liberties proves to be the most effective. "To achieve an efficient war economy the government should restrict its activity to the issuing of general rules or guiding principles and it should to a high extent rely on citizen co-operation. Only where it cannot be obtained are stricter forms of control necessary."¹ A skeleton organization with a broad outline plan is what is needed, for it is impossible to foresee

¹Mendershausen, op. cit., p. 82.

the precise circumstances and requirements of any future war. In Canada, the Canadian Industrial Preparedness Association is a group active in planning within industry itself, while the Economic Research and Development Branch of the Department of Trade and Commerce is laying overall plans for the re-implementation of an active government controlling body to function as the Wartime Prices and Trades Board did during the last war, should such a necessity arise. Thus, from the individual firm to the integration of all industries, detailed plans are being laid for rapid transition to possible wartime needs. These plans are being kept ready and up to date, and the spirit of inter-firm, inter-industry, and government-management co-operation which prevails is indicative of the success of the arrangement. We shall now examine the aids to such planning and special problems which may arise.

The functions of industrial defence planning.—The first thing any plan must deal with is the distinction between essential and non-essential industry, and the resultant pattern of the allocation of productive resources. Should we, during an emergency, run the most efficient plants only and close the others, or should we run all plants at partial capacity? Of course, if the industry can be completely eliminated there is no problem. But if non-essential production is limited to one or two producers, who can process all the available raw materials, then the remainder of the capacity will be available for more essential production. The difficulty is that conversion, and resultant shifts of labor might cause temporarily insurmountable problems, due to a shortage of housing, for example. The complexity of the situation shows the value of planning ahead of time. The actual process of restricting the number of firms may be done by (1) a merger, (2) the nucleus firm taking over and paying a

pre-determined levy on profits, (3) one pool firm producing all brands and trade marks, (4) an agency agreement whereby all firms get a quota of output and distribute it through normal channels. The problems of conservation and priorities, dealt with earlier are related to this question. All firms must be impressed with the necessity for standardization and substitution practices. If top men are transferred from civilian to war industry, the best talent in the country will be employed, and, at the same time, there will be little danger of them remaining a part of the government agency after their own industries recover at the end of the war. Thus key industrial executives form a sort of war-reserve, managerial force. The more they are acquainted with the problems they are likely to face, even if only to the extent of their place in the overall plan, the more rapid and efficient any necessary mobilization will be. At the same time they are, during peacetime, carrying on fully their peacetime function of producing regular goods and services.

In spite of a co-operative spirit in industry as a whole there still exists, upon the outbreak of war, a national reluctance to accept war contracts, when more profitable alternatives exist. If, however, reasonable allowances are made so that no producer has to take grossly unfair losses, the incentives, which during wartime enable industry to accept hardships and organize supply to an extent unknown under peacetime conditions, will prevail. For instance, if special depreciation allowances were provided for plants built for defence purposes, the construction of such plants under private enterprise could be undertaken before the actual emergency arose. Patriotic motives may inspire a businessman

to provide his services without charge, but he will hardly go so far as to expose himself to certain loss. Any such loss should be shared by all and a method, such as depreciation allowances, allows this sharing while maintaining the benefits of private management and incentive. Also appropriate government measures to facilitate the original financing of new, war-potential industries would be most desirable. Perhaps the Industrial Development Bank could administer such a scheme as one of its functions.

The form which production will take is also important. "It is generally possible to obtain excellent co-operation from industries in which the number of producers is small and the feeling of public responsibility and the fear of offending those in political power are well developed."¹ Thus large, centralized industry with monopolistic tendencies is beneficial for wartime organizational needs. Powerful trade associations may accomplish the same end. However, so long as there remain a large number of small producers, the policy of awarding defence contracts to only a few large firms is not wise, from a preparedness point of view. If war occurs the capacity of the small plants will be needed. Sub-contracting enables them to get the experience during peacetime, and during wartime reduces the amount of new building and movement of workers that needs to be done. Often, however, the product of the small producer does not lend itself to sub-contracting—it may be more rapidly mass-produced. Co-ordination of production may also become difficult. The small producer may run into working capital difficulties with a large order. Thus, the job for the planning board in defence preparation is to integrate the facilities of small business, provide some method by which they can

¹Spiegel, op. cit., p. 215.

pool scarce resources, give them financial capital aid, and lay plans for a comprehensive, co-ordinated, sub-contracting scheme which could make the best use of all facilities, large and small. It is difficult to find a plant to perform certain key tasks. A scheme, which in anticipation of these bottlenecks by one means or another provided for their solution when the need arose, would be essential.

The practice of placing "education" or "phantom" orders with industries, so that they may be familiar with the problems of the production of war materials and be ready to mushroom expansion on short notice, is another effective move in preparing industry. This scheme is particularly valuable for those industries which produce capital goods and tools. In Canada, the purchase of the Canadian, all weather fighter, XF100, from the A.V. Roe firm, the production of the F86 by Canadair, and the recent placement of large orders for radar equipment with Canadian firms are indicative of this policy.

In the United States it is estimated that actions for speeding up supply similar to those we have been outlining, "will save the nation from six months to a year in any future mobilization."¹

Organization of demand is just as important as organization of supply. In Canada the defence department has become one of the biggest single buyers in the nation. It is important that different branches of the government services do not compete with each other in the market. Public factories may be used as a yardstick to check on exorbitant prices charged by private producers. A central purchasing agency, which has a general idea of all requirements and information on all orders, to reduce

¹ E. V. Hickey, An Address, National Security Resources Board Release No. 94, (Washington: February 21, 1949).

overlapping and to make full utilization of available supply is desirable. Such an agency exists in Canada, since this wartime function of the Department of Munitions and Supply has been taken over by the Canadian Commercial Corporation. The most practical scheme, under actual wartime conditions, is to set up a control unit for each branch of industry. The experience of the last war has been and will be of great value in setting up all these plans for organizing both demand and supply of war necessities.

One of the most controversial questions of present day industrial planning is the strategic location of industry. The point is that by reducing the concentration of vital industry as much as possible we reduce the vulnerability of our economy, to air attack generally and the atomic bomb particularly. This would be accomplished, in effect, by "a systematic attempt to reduce fire hazards and traffic congestion; to facilitate access and egress; and to provide more fresh air, sunlight, and space."¹ These objects are also of peacetime benefit. There is an increasing trend of industry to locate in suburban districts. This should be encouraged. The general process seems to be that of a decline in the rate of growth of industry in urban centres and an increase in rate of growth in rural areas. We must be careful not to go too far in this plan however: " . . . it is immoral and infamous for us to . . . divert our means and our energies into such proposals as putting steel mills underground, and dislocating our economy in an attempt to gain, at least, partial protection from an uncertain hazard."² Any wholesale uprooting movement of a greater degree than encouraging the material spreading out of the population

¹ R. J. Watkins, An Address, National Security Resources Board Release No. 99, (Washington: March 29, 1949).

² Commissioner Pike, Atomic Energy Commission, quoted, Ibid.

would result in problems of waste housing, transportation and communication, and so on. Thus, decentralization is a policy we can encourage from a purely social point of view, in addition to the defence motive; but it can only be a gradual movement, like all social changes.

This raises the important consideration of transportation and communication organization which is fundamentally tied up with industry. Railroads, trucking facilities, airlines, ships, and pipe lines all must be observed from the viewpoint of their use in wartime. Obvious bottlenecks should be dealt with if possible. The railroad system around Halifax is an example of complex planning that was of great value. To-day there is no available slack of telephone equipment in spite of huge expansions in the service. An emergency would necessitate some present users being cut off which would be bound to slow down productions, to some degree. Small items, like the introduction of the twenty-four hour clock, would also be of some assistance in peace as well as war. Transportation facilities and storage provisions must be carefully integrated.

Agriculture is a little different than most industries but its product is just as essential. Consequently, a planning committee which could allocate the production of crops so as to obtain what is needed most would be of value in wartime. Such a committee might have purely peacetime economic benefits as well.

Canadian Wartime Planning Experience.—As an example of the experience Canada has to draw on for the administration of the mobilization of her industrial powers, we may examine a few highlights of World War II procedure.¹ When war broke out Canada had little actual war material producing equipment but a fair amount of capacity capable of producing such

¹ A. F. Plumtre, op. cit., Chap. 1.

equipment. There was little capacity for aircraft, guns large ships, explosives, good coal, or oil products available. There was a considerable supply of metals and some military vehicles. Electric power was plentiful but soon ran short. To-day the resources picture is brighter, especially in the aircraft and oil industries, and soon will be improved in so far as power resources are concerned. There are still marked shortages of requirements in some fields, however.

The first procedure in government purchasing was the letting of contracts on a competitive basis, indicating that; early demands were for ordinarily produced goods, profits were good, and some unused capacity was available. Such a favorable situation could not be expected during the next war. Various types of contracts, such as "cost plus a fixed price" and "cost plus", were used in situations where the manufacturer might be asked to produce something for which he had no idea what the cost would be. As needs became more war-like the Wartime Prices and Trades Board acted as the initiating, organizing, and purchasing body. Its leaders came from business, and it built up by experience a comprehensive scheme from a bare original outline, a system which will be invaluable in the event of future need.

Wartime corporations were established to look after housing, aircraft and ship production, and armament industries.¹ One of the main problems which arose was the readjustment of production to British specifications, when regular ones were just as good if not better. The lack of capacity was dealt with by the appointment of controllers for separate industries. Sub-contracting was used extensively and big firms were,

¹ e.g. Small Arms Ltd., Research Enterprises Ltd.

as stated before, found much easier to deal with and more patriotically responsive. Much of the machinery needed had to come from the United States. The government retained ownership in such machinery, which eliminated for the industry the problem of uncertainty, avoided amortization difficulties, and eliminated excuses for high profits. There was amazing agreement on the policy of governmental financing and ownership of war-production, capital equipment.

Actually, Canada just got really organized towards the end of the war, but all the experience gained in this organization of the economy, plus improvements in what she has to start with in the way of greater industrial resources and planning, seem to ensure a much more rapid transition to full war production in the event of another war. We must not forget, however, that it is the comparative picture with ones prospective enemy that really counts.

Labor and Preparedness

In any mobilization of industrial resources for defence purposes there are certain problems which are peculiar to labor. The main question in wartime is how best to organize all workers for their maximum contribution to the national effort, and, at the same time, how to hold in trust the rights they have gained in pre-war times, until peace returns. Thus any peacetime policy must be designed to facilitate the rapid solution of this problem, should the need arise.

In all countries during the last war, a form of government regulation was found necessary. In Canada, the National Selective Service was set up. It had several principles and purposes:¹

¹L. E. Westman, "The Principles of National Selective Service," War and Reconstruction, Some Canadian Issues, ed. A.R. M. Lower and J. F. Parkinson (Toronto: Ryerson, 1942).

1. To determine the type of supply of, and the type of demand for, labor; and through the use of priorities, under which each employer knew who was dispensable and who was not, to direct supply to fulfill requirements.
2. To make full use of the marginal workers available and to facilitate training.
3. To investigate matters affecting public and industrial health; to increase supply of workers and to reduce absenteeism.
4. To further personnel relations in order to promote efficiency, and to reduce turnover through the analysis and mitigation of their causes—such as transportation, housing, wages, and domestic difficulties.
5. Persuasion is the best method of carrying out duties, but compulsion must be used if necessary.
6. Morale must be maintained through usual propaganda channels.
7. A national balance—and an overall, ally balance—must be worked out with key, technical labor, as with other commodities.

To-day the National Employment Service has taken over this job. It is able to carry on many of the functions of its predecessor although there is no opportunity of compulsion other than that provided under the Unemployment Insurance Act. It has the opportunity to investigate and plan as well as increase the peacetime mobility of labor. It provides a working body which should be able to act immediately if necessary, from a defence point of view.

Skilled workers are the essential need in wartime, especially university trained scientists, and technicians, tradesmen, and mechanics, as well as skilled management. It was necessary during the last war to train over one hundred thousand workers in special technical and industrial

schools. Although the exact need is difficult to forecast, some such program during peacetime sponsored by industry or the government, would be of great strategic value. The large number of scientists in Canadian Universities, plus the important activities of the Defence Research Board, help to keep some supply of technical men acquainted with defence problems. Also, there are certain industries which expand tremendously during war-time—mining, for instance. It is thus essential to train men in these occupations, even if they do not remain in them. This would give a war labor force which would be somewhat the counterpart of a reserve army.

Before the last war there was about twenty per cent of the labor force unemployed. This group was largely made up of unskilled laborers. Even so, because of their natural mechanical inclination it was not necessary, until early in 1942, to transform the Canadian economy to the point of drastically disturbing the lives of the entire population. As a result, it has been proposed by some that it might be advisable for defence purposes to have a large nucleus of unemployed workers who could instantly be absorbed into war industry. This is not only a socially undesirable situation but is also based on a false idea of its defence merits. For, if the purpose of an unemployed labor force is to facilitate speedy mobilization, an effective inventory of unessential, employed workers would be more accurate as to skill, and the present machinery of the National Employment Service would allow just as rapid and a more efficient transfer of workers. Also no worker ever became skilled while he was unemployed. Indeed the exact opposite may occur. The more people we can keep employed the more active industrial capacity we will have and the more skilled labor force we will have. Thus, so far as defence and peacetime social motives are concerned, full employment is the best situation.

In any plan for labor mobilization the armed forces must not be forgotten. In June 1940, the National Resources Mobilization Act gave the Dominion government the right to require, "persons to place themselves, their services, and their property, at the serve of His Majesty", limited only in that military service outside of Canada was not required. Over a million men and about forty-five thousand women served in the armed forces.¹ With a group of such a size the difficulty of duplication of qualifications is bound to arise. If possible some means of discouraging essential industrial personnel from becoming key men in the armed forces should be developed to limit this duplication, although for integration purposes it may be desirable in some cases.

So far we have considered the organization of labor purely from the point of view of attaining maximum production. Labor, however, as a resource presents a special problem in that it is also a human force. This causes certain peculiar situations with regard to many of the economic processes that we have considered. For instance, a small wage rise may provide the necessary incentive for greater production, but it may also have substantial repercussions on the rest of the economy. Thus control of wages is required. Now labor will agree to the logic in this argument but at the same time feels that increased costs should be covered by a cost-of-living bonus. This has the same effect as increasing wages in so far as inflation is originated.

Unions have no desire to hinder any work in an emergency, but they have no intention of surrendering conditions, established after long years of effort, until the necessity for such action is shown. For example extra shifts rather than longer hours are desired, where possible.

¹Department of National Defence, Canada's Defence, op. cit., p. 4.

Established safeguards for the health and safety of the workers are not to be abolished and suspension of other labor conditions should be only a last resort to speed up war production. The maintenance of a high level of industrial morale is one of the key factors in obtaining a high production level. Thus, organized labor by its watchfulness can avoid the imposition of conditions which might easily cause serious disruption of industrial relations in peace or war. There is often the tendency to go after labor disproportionately for the necessary increase in effort because this is the easiest way of getting more output. An investigation as to just where equal sacrifice from all segments of society occurs would be of inestimable value for our peacetime economy as well as for distribution the war burden. Indeed, any investigation in the field of social-economic relations would be of benefit for all defence plans.

During the last war the Industrial Disputes Commission was set up to insure immediate conciliation and settlements so as to avoid strikes and lockouts. The necessary flexibility of the system caused a great deal of administrative trouble and wide variations in the settlements arrived at. Such a department would be indeed valuable in peacetime as well as wartime. Any means which can be used to reduce friction between labor and management will strengthen the industrial system and hence be advantageous for defence purposes. However, any government action as a conciliation agent is bound to result in friction between the government and labor. During the last war the main objection was that labor had no voice in the mobilization program. Certain legislation, especially that concerning strikes, made labor feel the government was not being fair. The belief that low price contracts were made possible through

victimization of labor was prevalent. Also, it did not seem logical to labor that strikes should be outlawed on the basis of war necessity when the production of luxury goods was kept on. The solution would appear to be to give labor a voice in mobilization plans and procedures. For instance a labor representative on the committee set up to advise the Minister of National Defence and the Defence Committee of the Cabinet on matters of industrial organization would be of considerable assistance in reassuring labor that their problems were getting a fair hearing.

An enlightened leadership of a strongly unionized labor force would present the ideal conditions for the preparation of labor for defence. It is true that there is a danger that unions could become dominated by subversive groups, but if that danger is real enough to present itself under such circumstances then the country is dis-united and weak, and may be defeated anyway.

A Dominion wide labor legislation scheme would also assist in standardizing labor conditions between the provinces. There would then be no tendency to penalize those provinces with more beneficial labor legislation in the awarding of contracts, and labor organization would be facilitated.

In conclusion, then, we say that any planning policy which can reduce friction in the industrial machine and can increase efficiency by making all the agents of production, and especially labor, feel that they are getting fair treatment--such a policy will increase the industrial potential of the nation with the resultant benefits in both war and peace.

International Industrial Co-operation

The type of industrial organization which is set up by any nation depends, to a large extent, on to what degree she intends to be self-sufficient. Protection by self-sufficiency, although expensive, is felt by some to be essential for defence. However, in wartime the extra production provided by geographical specialization is urgently needed. Thus, if trade can possibly be carried on in wartime, a free trade policy is most advantageous as a long run policy for war preparation. There is some truth in the argument that tariffs by, providing protection for essential industries, enable a nation to build up a more balanced economy. Therefore, a certain degree of such control over international trade is perhaps desirable although, as mentioned above, too much control defeats its own purpose. In wartime, what generally happens is that a government monopoly of foreign trade is established. In some nations this is carried on in peacetime, also. Such a policy of control may be advisable during peacetime to bring gradually into being less restrictive tariff measures, such as those advocated by the International Trade Organization, but if it leads to greater overall restriction the method is not advantageous. especially for Canada. At the present time Canada is acting on the assumption of the eventual restoration of relatively free trade. There is a hard core of international resistance, however, to any definite commitments on the reduction of national controlling powers. World wide trade co-operation is a rather idealistic assumption on which to base any economic planning, especially for defence.

However, it is quite conceivable that trading arrangements for wartime use could be worked out with some or all of a nation's allies. That is, each nation would produce, or plan to produce, that part of the

war equipment which it was best able to produce, in that way ensuring larger and less expensive production. Naturally, one must be certain of the capability and integrity of ones allies before entering on such a plan, and transportation problems must not be too difficult. Thus, the difficulty and uncertainty of international commitments decrease their value, to a certain extent.

With respect to international alliances, Canada has two natural partners in the United States and Great Britain, as well as certain arrangements, which we will not discuss here, under the North Atlantic Pact. In a joint declaration by Canada and the United States, made by the Prime Minister in the House of Commons on February 12, 1947, it was stated that, "in the interests of efficiency and economy, each government has decided that its national defence establishment shall, to the extent authorized by law, continue to collaborate for peacetime joint security purposes."¹ Co-operation on more than a strategic and military level is desirable and present. Under the Joint United States--Canada Industrial Mobilization Planning Committee the two governments are exchanging information on problems of mutual interest, concerning the industrial planning activities of the two countries. A long term production schedule for both countries would be advisable, with arrangements such as existed under the Hyde Park Agreement during the war. Indications of such action are present in the recent move to introduce a degree of standardization in military equipment; a move which should be of advantage to both countries. A closer integration of the American and Canadian economies would appear to be a desirable defence move.

¹ Department of National Defence, Canada's Defence, op. cit., p. 37.

Canada hopes both to strengthen her defensive position and to improve her trading situation with United States. The long-term, common understanding of the two nations and the lack of any significant transportation problems make this alliance a very feasible one. Indeed, transportation difficulties may actually be reduced if the eastern and western sections of each country become more economically integrated. The obstacle of the divergent interests of certain groups and districts is perhaps one of the greatest potential difficulties, one which is regularly illustrated on the floor of Congress, regarding such matters as the St. Lawrence Waterway Project.

Canada's defence ties with Britain are historically much older than those with the United States. To-day, however, attention has shifted from the problem of how Canada can supplement Britain's defence force, to the problem of how the two countries can work out a mutually supporting scheme for the production of war materials. One of the biggest problems here is that American and British equipment and standards are not the same. Thus, if Canada is to work out a defence plan with both of these nations, it is greatly in her interest to promote American-British standardization. Until this end is accomplished difficulties--such as the question of deciding on whether to have an American or British jet plane and the unsatisfactory result of ending up with both, plus one of her own--will continually arise, resulting in economic waste and military vulnerability. The transportation situation between Britain and Canada is much more acute and any substantial interdependence between these two countries, for unique weapons and supplies, would be decidedly risky. Canada should so design her defensive trade relations with Britain so as to be able, in an emergency, to get along without her support. It should be remembered that a fairly small rate of loss in

transportation would soon eliminate any economic advantage in specialized production. Britain's predicament in this situation is more critical than that of Canada, since she can be cut off from both Canada and the United States.

There are certain defence facilities for which national specialization within an international alliance is more applicable than productions by each member, and it might be advisable to mention one or two of them here to show fields in which specialization and co-operation may be extended considerably. Canada for instance could easily train all the air crews for the western allies under a scheme similar to the Commonwealth Air Training Plan, which showed its workability under the stress of war. There are also long range implications that Canada will become a shipbuilding arsenal. It little matters where the ships are built, they are mobile by function and consequently national concentration of production creates little strategic hazard, especially if the nation supposed to be least likely to attack is chosen as the production point for such commodities.

The key to international strategic aids and economies lies in the intelligent co-operation among potential allies. It is useless to expect perfect co-ordination and instant solution to the problems, but, at the same time, it is unwise to ignore the opportunity to promote those defence measures which would provide greater security in time of war, through a more efficient fighting force, while furthering the opportunity of world peace, through the introduction of at least some co-operation in the world.

It is the job of the defence planner to see that plans are ready when the time comes so that the fullest use may be made of the combined industrial forces within an economy and within an alliance.

CHAPTER V

CONCLUSION

We have completed our formal investigation of the economic side of national defence. It remains now to examine our findings in an effort to present a program which may guide our particular defence actions to conform to some general pattern. However, we immediately must face the fact that the study of national defence seemingly raises more questions than it solves. Many of these questions which are introduced can be answered only at the precise time of implementation of the program--that is they depend on the environmental variable. Others can be answered only in retrospect. It is felt, with the latter type especially, that more is accomplished by merely raising the question and pointing out the problem, than by trying to hazard one opinion where another would be equally valid. There seems, so often to-day, to be a tendency to disguise the main principles with detail to such an extent that we lose sight of the fundamental aims. Particularly, in the field of defence, are the strategic and political arguments liable to direct our attention towards factors which are of no fundamental significance.

The first thing we noted was the economic requirements for war. An energetic population is needed to fight a war and to produce the goods necessary to carry on modern warfare. A sufficient supply of strategic raw materials and a well-developed industrial plant are ideal in furthering the high production objective. We found that the geography of a country presents certain strategic and political complications, as well

as being important in determining the available supply of raw materials.

All countries have a specific pattern and amount of these resources at any one time. Some resources can be varied on a large scale; some can be varied partially; some cannot be varied at all; but all variation is essential in the long run. For instance, it would take decades under normal circumstances to appreciably alter industrial capacity or the size and distribution of the population. Consequently, if any steps are taken to strengthen a country by improving its situation with regard to any of these resources a long run plan is necessary—a plan which goes on, war or peace, and is altered only by a change in the fundamental situation as regards the likelihood of war and peace.

Thus, our attitude in dealing with long run problems is directly dependent upon the probability of war. Upon examination we found that the causes of war are many and varied but can be summarized as either economic or social. The relative importance of these two types is uncertain but from outward examination it would appear that regardless of type, the factors leading to war are still very active. Can the forces of peace overcome these factors before another war occurs? This is one of the retrospective questions mentioned above and cannot be answered definitely. However, from our investigation of the present situation and the possibility, however remote, of the success of the United Nations in encouraging co-operation, education, and a world police force, we saw that forces are definitely at work and could perhaps eventually be powerful enough to overcome the causes of war. Yet at present it would seem to be folly to assume that war is impossible, or even improbable. This is the fundamental tenor on which our whole long run analysis is based. If it should change, any long run objectives which we arrive at

will have to be changed to coincide with the new situation.

What can we conclude about the long run policies? The first question raised is whether defence is worthwhile at all. Would it be better to surrender than fight? In attempting to answer this question from an economic point of view, we made an investigation of the costs of war and proved that, economically speaking, war is not worth while. A further investigation showed the reason for any future war would appear to be based on the idea of the preservation of individual rights, as opposed to the rights of the state. So long as the benefits that the people obtain in following their chosen principles are greater than the economic and social losses which are sustained in their protection, it seems that war will continue. The only solution short of war would seem to be to persuade all the nations of the world that war is a very wasteful way of settling differences. Thus, our first long run objective is as we have often stated the preservation and promotion of peace.

In considering the long run plans for increasing the war potential, the answer does not seem so clear, however. For instance, should we restrict the use of resources in peacetime so that they will be readily available to put into war production if the need arises? Should we carry on such restrictions, to the point of interfering in the workings of the peacetime economy, to provide for an uncertain eventuality? The problem in dealing with all war potential resources boils down to deciding on the degree of regular control which should be implemented by the government for purely defence purposes.

This in turn introduces the fact that in preparing for defence,

measures may be imposed that violate the rights which the nation is preparing to defend. All we can say is that any long run defence measure which does not fundamentally interfere with the peacetime way of life of a nation is governed by the amount of premium that the nation is willing to pay for the degree of war insurance, in the way of prevention and protection, which is offered. Once, however, a nation goes to war the main objective is to win that war, and all measures are designed in consideration of this ultimate view.

The policy which we outline in the body of the thesis roughly amounts to setting up a long run scheme for obtaining defence objectives and, at the same time, to considering short run methods of increasing and speeding up production and distribution, with what production factors we have at any given time. We have noted some of the long run procedures. Let us now consider the short run objects and methods.

In our investigation as to what we could do to facilitate the use of the resources available in the short run, we saw an advantage in setting up a planning mechanism. It is not possible to instantly increase what we physically have on hand when war breaks out, but we can plan, ahead of time, the best way to allocate and use what we do have. We saw the place of financial policy was merely to smooth out the transition stage, keep up morale, and distribute the burden of war in a reasonable way. Other administrative measures such as rationing, commandeering, and priorities are designed to distribute what is available in the most efficient manner. Subsidies bounties and price control serve the dual purpose of encouraging production in certain lines, while avoiding the economic and psychological evils of inflation.

To this extent most of these measures are fairly simple. But when should they be imposed? Our analysis would lead us to believe as soon as possible--that would mean automatically upon the commencement of war. This introduces an administrative problem. Even if the program is set down to the last detail on paper, it will still take time to gather officials to carry on this control work.. Should we keep a staff of trained civil servants who are primarily waiting to administer such a program -- a situation analogous to the permanent armed forces? In all cases like this one we must find what is desirable and what is feasible and reconcile the situation to the best overall advantage.

Another question which arises in connection with financial considerations is whether we should run a budget surplus in peacetime to pay for war and to increase the financial resources available at the time of war. Even if this idea is valid and desirable would it be possible to maintain a surplus over a lengthy period of time? The problem of subsidizing defence industries is also important. How much of the defence burden can a nation absorb in peacetime without endangering the economy or destroying the morale of the people? Where the line should be drawn between self-sufficiency and national specialization is the larger problem, which depends on so many factors that it is impossible to even attempt an answer.

Another phase of our discussion deals with industrial potential and industrial mobilization. Again both long and short run policies are introduced. How can we increase what we have in the way of potential, and how can we speed up the mobilization of all available factors? Here the answer is planning and more planning. The difficulties of changing the techniques of business, when the measure of success becomes size of

output not size of profit, and of the subjection of managerial staffs to the red tape of government departments, are no less real because of their intangibility. These problems will be very difficult to solve without patience and co-operation between government, management, and labor.

In considering any preparedness scheme, we must enquire as to the validity of the contention that an economy, completely organized and keyed up throughout the peace, uses up all its hidden stock and energy which are so essential to a prolonged war. Was this a contributing factor to the downfall of Germany and the slow postwar recovery of Britain?

The contribution of organized labor to the war was also noted. In this area every problem seems to hinge not on the idea of labor, or any other group, doing more than its share, but that the group is forced to do more than its share. This is one source of friction which can be eliminated during the peace, so that it will not add to our troubles if war occurs. To give all interests a say in the planning, to stress the need for co-operation, and to get them to agree among themselves, are important objectives. A nation that lives in voluntary economic harmony during peacetime will have no trouble in mobilizing the maximum contribution from all classes in time of war. Too much strategy should not be based on the economic estimate of what can be done. Under emergency conditions more than is believable can be accomplished. Anything that can be done to improve the accuracy of the estimate of our industrial potential is, of course, all to the good.

The relation between unemployment and the mobilization of labor is controversial, and only experience will prove whether those who claim that full employment during peacetime increases the mobility and skill

of the labor force and hence the war potential, are justified.

International economic co-operation for the purpose of defence was outlined. There is no doubt that, under peacetime conditions, such a move through allowing specialization increases the war potential and decreases the cost. The question we have to answer is whether the increase in risk during wartime offsets this advantage. International economic defence co-operation seems valid to a point--where that point is creates the problem. Perhaps any alliance of this type may be regarded as at least a good omen, indicating partial international co-operation and a step toward an overall economic alliance.

Strategic or military developments can easily upset any of our economic plans (e.g. the new type of submarine which, from all accounts, has not yet been effectively challenged by surface vessels, might mean a great reduction in ocean shipping). As a result production of war goods ahead of time is liable to be wasted; yet a certain amount of such production is essential for rapid mobilization. Again, where do we draw the line? The more we proceed, the more apparent it becomes that any direct defensive efforts in the form of preparation for war are likely to be of little or no use when war finally comes.

At the beginning of this chapter, we mentioned the possibility that certain general guiding principles--certain fundamental aims--might be adopted which we can follow in considering short or long run economic problems, regardless of the conditions of the time. From our subsequent analysis it is obvious that there are not many which fall into this category, but we may list a few illustrative ones:

1. The fundamental aim of all defence policy is to provide the greatest real satisfaction to the people of the nation in both peace and war.

No expenditure on defence, or permanent regulation to further defence objectives, should be imposed unless the majority feel that it is worth while and desirable, in the long run.

2. Absolute security is unobtainable. What we can obtain is reasonable security which exists when we have such powerful military and industrial forces that it would be foolhardy for an aggressor to attack, and yet forces not so strong that their maintenance would sap our national strength and exhaust our resources.
3. Economic measures should be primarily based on civilian, peacetime needs but should also consider defence demands; not primarily based on wartime needs with peacetime benefits as incidental considerations.
4. Any measure which increases co-operation, raises morale, or satisfies wants, furthers the defensive ends of a country by creating the human desire and spirit to defend the national way of life.
5. Planning is the most essential and most feasible aspect of all defence programs. In an emergency accurate, up-to-date plans can be implemented with amazing rapidity. Government planning is essential for co-ordination, and private planning where detail is involved, is accurate and very valuable. Naturally any radical strategic or technological development, such as the atomic bomb, must immediately be allowed for in all plans. It is easier and less expensive to keep plans up to date than equipment.
6. Peace is the basic answer to all defence problems--an assured peace. With such a state all the problems of defence, economic or otherwise, fade away. Thus, the most important long run function of defence policy is to work for peace.

In the final analysis, what does this mean in terms of present

procedure in Canada? Obviously it is impossible to point out all the plans Canada should make, and everything she should try to do. A few illustrative points will explain the possible range her defensive moves may take. Primarily, the maxims listed above should be applied. This means on one hand a complete system of essential mobilization plans and on the other, active support of the United Nations. The North Atlantic powers should work in economic agreement to the extent that is strategically advisable, and Canada should support this idea of the Atlantic Pact. Also a decision between the use of either British or American equipment, or better still, a campaign for British-American standardization, is necessary immediately, if Canada is to be in any way prepared to meet an emergency. Fortunately Canada's resource picture is, in general, fairly bright, but it is essential that any gaps be filled in by stockpiling or trade agreements with allies, as soon as possible.

The chief difficulty in all defence measures is of course that we cannot tell what is being accomplished by them until it is too late to do anything about it. Are our armed forces efficient? Are we getting our money's worth out of them? Are they large enough? Are we spending too much, or not enough, on defence research? Is the emphasis on the Air Force out of line? These are questions no one can really answer except in retrospect and on which strategic experts can hazard only a guess. The purpose of economic analysis is to strive to show the relative economic gains and losses of any such action. The final decision is however rarely made on purely economic grounds. All Canada can do is, within the bounds of the maxims we have given, to place her trust in the skill of her strategic, military, and diplomatic leaders and in the planning and patriotism of her industrial leaders, to set the

best course possible, and to alter the course intelligently as conditions change; and to support the decisions of, and the program laid down by, these men. Mistakes will be made but we may hope an enlightened world will make fewer as time goes on. In concluding a summary of Canada's program, the dual objective of all defence policy can be stated once again:

Strive for peace; be prepared for war!

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