DAMAGE INSURANCE AND COMPENSATION

5 March 1957

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CAPTAIN SAUNDERS: General Hollis, members of the class: When Colonel Barrett talked to you about the final unit of the college year, he stated that at intervals between that time and the starting of the final unit, which will be after the field trip, there would be some lecturers brought to the platform to fill in certain areas which had been either neglected or given a "once-over-lightly" treatment. One of these subjects is to be given to us this morning--on damage insurance and compensation.

Now, just in case someone failed to read the biography--that's supposed to amuse you people--Dr. Jack Hirshleifer is an Assistant Professor of Business Economics in the School of Business at the University of Chicago. He is also a consultant with the Rand Corporation. He served in the Navy during the war. He has been worrying about this same problem of war damage insurance and compensation, and he has written some articles on it; and we've asked him to come here and discuss it with us this morning. This is his first visit to the college.

It's a pleasure to welcome you to this platform, Doctor--we can call you "Doctor" here. You say they only use that at the Pentagon for you--and introduce you to this year's class.

DR. HIRSHLEIFER: Thank you, Captain Saunders.

Gentlemen, I have been asked to speak to you today on the following topics: "Problems of Government insurance and compensation for damage in nuclear war; role of damage insurance in economic rehabilitation and recovery; different methods of dealing with the problem and present planning status."

Probably most of you here have given at least some fleeting attention to the impact of nuclear bombing upon your personal and family wealth position. Despite the highly selected nature of this group, however, it is probably safe to say that practically none of you have taken any systematic precautions to preserve even the lives of yourselves and your families, to say nothing of property interests, in the event of catastrophe. To all of you who fall in that class--and I'm afraid I do myself--congratulations are due on our successful gambling with fate to date. Whether the same congratulations will be due tomorrow remains to be seen. And what may be said of 99.99 percent of the individuals of our Nation may also be said of its Government. Aside from purely military modes of defense, national policy has not directed itself in any measurable degree to the problem of adapting our society to the changed military environment in which it must henceforth exist.

I. Compensation and Insurance as Measures for Social Adjustment to Bombing Hazard.

I preface my discussion with these somewhat obvious remarks because it is my view that war damage insurance and war damage compensation measures should be considered primarily as procedures for both private and social adjustment to the fact of bombing hazard. This is to be contrasted with what may be regarded as the fundamental underlying viewpoints of the insurance industry on the one hand, and of the relevant Government agencies with responsibility in this field on the other hand.

The insurance industry has concerned itself, so far at least, exclusively with the problem of private adaptation to the bombing hazard. This is probably in response to customer demands for protection against this new kind of risk. Largely at the initiative of the insurance industry, legislative action was seriously considered in 1951 to reactivate the War Damage Corporation of World War II. This Government corporation during World War II issued about 140 billion dollars in policies through the agency of a great number of private insurance companies, who bore 10 percent of the risk.

I think one reason the insurance industry looks kindly on this sort of operation is the fact that the insurance companies profited by it during World War II to the extent of some 20 million dollars. The Government itself earned a remarkable total of some 210 million dollars as a consequence of the unexpectedly small amount of damage. Before we get too enthusiastic about this, however, I should mention that in the Philippines, where damage was heavy, gratuitous compensation was granted in the amount of 400 million dollars. So on balance, as you might expect, this Government did not profit.

As I indicated above, the natural approach of the insurance industry is to establish a mode of private adaptation to the bombing hazard, namely, by providing individuals with the opportunity to insure their property against bombing risks just as they can insure themselves against the hazards of theft, or fire, or earthquake. Not the slightest attention was given, so far as I have been able to determine, by either proponents or opponents of reactivation of this insurance plan to the question of whether on balance it promised to promote or to hinder the adjustment of our Nation as a whole to the greatly augmented war damage hazard. Social adaptation to the bombing hazard is obviously not achieved by a mere transfer of liability from property owners to taxpayers or to stockholders of insurance companies. In this case it is clear that the risk is merely shifted from one group of people to another. National, as opposed to private, adaptation to the bombing hazard can come about only when the aggregate of the real wealth of our society is made less vulnerable to destruction or to impairment by enemy attack.

Vulnerability may be reduced in a variety of ways, aside from improvements in direct military protection. Relocation in less dangerous or in more heavily protected areas, blast- and fire-resistant construction, duplication of critical facilities or records, improvement of fire-fighting procedures--all these are just instances of the real modes of protection available to our society.

Just what would be the effect of the proposed Government insurance that I mentioned before upon real social adaptation to the bombing hazard? It should be intuitively clear, I think, that the effect could be either beneficial or adverse, and that this would depend upon the system of rates charged. If the insurance rates are differentiated in accordance with the real risks involved, there will be an incentive to reduce vulnerability in order to secure insurance protection at lower rates. That is to say, the value of the insurance saving will be measured by property owners against the cost of stronger construction or of other means of providing real protection; and wherever the cost of the latter is lower, there is a rational incentive to adopt measures reducing vulnerability.

As you may have noted, I am for the present slighting quite a number of serious questions of a practical nature which would have to be answered in a thorough analysis of such a proposal. I will mention here, however, that I believe that, given a reasonable number of years in which rate differentials will be affecting investment decisions, the consequence of such a plan, that is to say, of differentiation in rates on the basis of risk, will be the achievement of a notable reduction of national vulnerability to bombing. All I really want to maintain here, however, is that the effect of differentiation according to risk is in the right direction.

By contrast, failure to differentiate rates according to risk in war damage insurance will clearly be a perverse policy. The effect, if any, will be to increase the Nation's vulnerability to war damage. The adoption of protective measures would be discouraged; and, in fact, an incentive would be offered for the abandonment of private protective measures already in existence. Why should a property owner incur or continue to bear the cost of real protective measures?

Consider, for example, the analogous case of fire insurance. In the absence of fire insurance, a property owner may decide whether or not to install sprinklers on the basis of the cost of the sprinklers versus the value of the real protection gained. If insurance is then offered to such a property owner at rates not reflecting the reduced fire vulnerability with sprinklers, it is clear that if he buys the insurance, he will tend not to install the sprinklers. Of course, he may not buy the insurance; and if he already has sunk his investment in sprinklers, he is unlikely to. This is the phenomenon of adverse selection of risks, which always occurs in insurance when rates are not proportioned to the true chances of loss. Adverse selection means that the good risks tend to stay out of the insurance pool, because the overall rates take account of the poor record or the poor prospects of the bad risks. The bad risks, on the other hand, are happy to receive an insurance bargain; that is, they buy the insurance as an alternative to the adoption of real protective measures.

The insurance provided by the War Damage Corporation in World War II and by its proposed successor in 1951 was or would have been partially differentiated according to risk. The language of the legislative directed that rates be based on the estimated risk of loss of each type of property. However, it also directed that these rates be made uniform over the whole Nation. The apparent intent of these somewhat contradictory provisions was to eliminate regional discrimination; but I believe that it was not the intent to forbid discrimination between, for example, rates charged for urban property versus rates charged for rural property.

The failure to discriminate on a regional basis was rather important in the insurance provided during World War II, since the Nation's coastal areas were obviously more vulnerable than the inland areas under the conditions of World War II. As might have been expected, there was definite adverse selection in this respect, much more proportionate coverage being written on the west and east coasts than in the Midwest, since there was no discount given for the lesser risk in the Midwest. In the future it appears that divergences in regional vulnerability may possibly be diminishing with the increase in range of offensive weapons, so that this imperfection of the World War II plan may not be so crucially important, that is, assuming that discrimination between urban and rural rates would be permitted. That is obviously quite vital.

If the reaction of the insurance industry to the increased bombing risk--namely, the proposal of a scheme whereby customers of insurance companies can get protection and the insurance companies themselves can do some profitable business--is understandable, so perhaps is the reaction of the Government officials with responsibility in this field. In 1951, when the reactivation was proposed, the responsibility was held by the Bureau of the Budget, which took a position in opposition to reactivation of the War Damage Corporation. Instead, the Bureau proposed that the Congress simply give the President authority to grant compensation up to a total of 22 billion dollars in the event of atomic disaster.

We may describe the insurance companies' proposal in a nutshell as "private protection plus business as usual." Anyone with enough foresight to buy insurance could get protection, but little attention was paid as to whether his foresight involved a real reduction of national vulnerability or a mere transfer of the existing risk to a different party. The Budget Bureau's proposal might be similarly described in a nutshell as "paternalism plus a blank check." No foresight on anyone's part is called for; nor would foresight be rewarded. Everyone would be compensated on equal terms after the event, the only problem being to provide enough discretionary authority and enough funds for the Government agencies to do the job.

It is important to note that a promise of simple compensation, like that proposed by the Budget Bureau, is logically equivalent to universal free insurance. Such a proposal would carry to the extreme possible limit the perverse effect on vulnerability which follows upon failure to differentiate rates according to risks. That is to say, a promise of simple compensation provides the maximum incentive to property owners to avoid expenditures having the effect of reducing vulnerability. In the absence of such a promise, the risk of loss itself would induce some rational adaptation--somewhat stronger construction, better fire protection and so forth--through probabilistic calculations on the part of property owners comparing the risk of loss with the cost of protection. With compensation promised, however, uncertainty would be relieved and with it all incentive to undertake protective measures against loss.

To summarize this discussion, seen from the point of view of social adaptation to the bombing hazard, the insurance proposal of the industry was somewhat imperfect because of the limitations placed upon rate discrimination according to risk; but the promise of compensation proposed by the Administration was totally perverse and the worst possible solution. I emphasize "seen from the point of view of social adaptation to the bombing hazard," because, of course, there are other possible points of view.

The actual outcome in 1951 of the conflicting proposals was that nothing was done. The stabilization of the Korean conflict soon thereafter eliminated the psychological pressure for doing something in the field of war damage insurance or compensation. From the point of view of social adaptation, this delay is another mistake. It is only when a sound plan can be put into effect well in advance of wartime that one can expect the slowly reacting private decision centers of the economy to take action to reduce vulnerability. If war is really near, it is too late for all but emergency Government action.

Since 1951, Federal responsibility in this field has been shifted to the Office of Defense Mobilization; but that agency has not as yet released any information on the current status of their plans for war damage insurance or compensation.

It is, I think, of some interest to note that Government insurance against another form of disaster--losses due to floods--is now going into effect. The rates for policies offered by the Federal Flood Indemnity Administration will, according to current plans, be strictly differentiated on the basis of the best available estimates of the risks involved in insuring covered properties. The discussion of the pros and cons of Government flood insurance has clearly recognized the connection between insurance rates and the need to provide a real reduction in vulnerability by limiting industrial and urban encroachment upon the flood plains of our rivers. In fact, the Government flood insurance plan is expected by its proponents to achieve a real reduction in national vulnerability to flood damage.

I am somewhat doubtful about this myself, for two reasons: First, the flood insurance plan does continue to offer important subsidies of various kinds to policy holders, and therefore to people who build in such a way as to be vulnerable to flood damage. Second, it does not seem to have been clearly recognized yet that one of the important inducements to occupation of flood plains is the fact that when disaster strikes, those who have been gambling with nature in their decisions to locate in flood plains can count on the sympathy and charity of both other individuals and Government to provide emergency relief and assistance. This also is, in a manner of speaking, free insurance. Nevertheless, even with this said, the thinking in the field of flood insurance is well in advance of what we have seen in official discussions of war damage insurance. I mean by that statement the realization of a connection between the insurance rates and the potential effect in achieving a real reduction in vulnerability.

II. Compensation and Insurance as Measures for Facilitating Recuperation from Bombing Disaster.

The above discussion has been entirely one-sided in tracing the history of compensation and insurance proposals in the light of one fundamental idea--that these proposals are to be evaluated primarily in terms of their success in promoting a real national reduction in vulnerability to bombing attack. This is a purely preattack criterion. In principle, at least, we may conceive that the postattack implications of the alternative possible measures, in promoting or hindering recuperation from any given degree of damage, may be of equal or even greater importance.

After the bombing, the question of compensation is but one aspect of the unholy financial tangle in which the economy will find itself. I am assuming, of course, that after bombing there is enough survival of both population and property so it's worth our while to think about it. Under this assumption let's imaginatively survey the financial aspect of the postbombing economy, first assuming no preexisting insurance plan.

Aside from the fearful direct destruction of property and of property owners, there will be destruction of evidence of title and disruption of economic relationships to an almost unimaginable degree. Think of these limited aspects of the problem: How is the smallest individual or the largest corporation to make decisions when records of bank accounts, stock ownership, and other titles have been destroyed? Even the aggregate position of destroyed banks, not to mention the individual accounts, will typically be impossible to reconstruct, especially as the Reserve banks and the Government records are themselves highly vulnerable, being located in prime target areas. Where evidence of title survives, the owner will all too frequently have disappeared without a trace, together with his heirs, if indeed these can be determined.

Disruption of economic relationships, in the absence of remedial action, will almost certainly set off a chain reaction of bankruptcies. Destroyed firms will be unable to pay debts upon which undestroyed firms have been relying for funds to pay their creditors, the second-order defaults will create third-order ones, and so forth. There is an analogy here to the financial crisis in 1933, which required a bank holiday.

We must briefly examine this overall financial problem to establish the setting for a consideration of compensation alternatives. The measures chosen for coping with the financial situation will limit, or even determine, what can be done in the way of compensation.

The most radical solution of the financial problem would be the abandonment of the private ownership system, for the duration of the emergency at least. In some ways this is less radical than it appears. War always sees great restrictions placed upon the freedom of property owners to decide the disposition of their property. In practical operation, under this solution everyone would become, so to speak, a hired employee of the Government; or perhaps a better analogy would be a drafted soldier assigned to civilian duties. The State would take over all equity interests and liabilities.

The operational problems arising from this course of action include the difficulties of preventing leakage of profits, the practical impossibility of making intelligent decisions for all economic units bureaucratically, and the impairment of incentives to efficiency on the part of the operators. In general, I would say that this system appears unfeasible on an overall basis, though in a very considerable number of instances the difficulty of determining ownership will probably dictate Government-appointed management.

If Government ownership were adopted as a solution, there would probably be no compensation question; or, at least, the question of compensation would become a purely private one of the distribution of consumption possibilities, since important productive decisions would be the province of bureaucrats, not of property owners.

A rather more likely solution of the financial crisis, I think, would involve reliance upon a moratorium to freeze the preexisting financial arrangements, while establishing emergency credit lines for surviving firms. Such a moratorium could be more or less radical. In the extreme limiting case, an attempt could be made to cut free from all preexisting debt or contractual obligations, subject only to ultimate settlement after the emergency. Less radically, the moratorium could after some time be lifted on all obligations except perhaps those due to banks or to other financial institutions, all of whose functions would probably be taken over, at least temporarily, by a separate emergency banking system. Ownership interests, however, would not and could not be placed under moratorium if the principle of private ownership of property is not to be surrendered. For many firms, including most public corporations, owners will still be able to make decisions even though a substantial portion of the ownership may be undetermined and so may have to be represented in trust. For some other more closely held firms, ownership may be so doubtful as to require management by trustees or conservators. I might mention that Volkswagen of Germany is an example of a firm still managed under this principle--trustees for undetermined owners.

The questions of moratorium and of compensation are intimately linked. The situation requiring moratorium is the chain reaction of defaults on debt or other nonperformance, starting with those firms whose property or titles have been directly impaired by the bombing. Compensation for bombing losses will enable repayment of the frozen debt and of the emergency Government advances, permitting the gradual liquidation of the frozen claims and restoration of normal economic relationships. Failure to compensate for bomb damage will ultimately involve either cancellation of most of the obligations under moratorium, or alternatively an enormous number of concerns may be subjected to ultimate bankruptcy proceedings if the moratorium obligations are to stand.

A rather likely outcome of the overall financial situation, combined with the methods of war finance the Government is likely to adopt, --and governments traditionally adopt such methods--will be a considerable inflation. This would permit the moratorium obligations to be nominally discharged, while <u>de facto</u> they would be largely cancelled.

Considerations of equity would seem to dictate acceptance of the compensation principle. In addition, this principle may be vital in preventing the development of violent revolutionary sentiments among those dispossessed by the bombing. Compensation is likely to work rather poorly in practice, however. Destruction of evidence will obviously be of major importance.

Another interesting question is how to finance the compensation payments. A capital levy would be the appropriate source of funds in principle, since what is involved is a redistribution of the Nation's surviving wealth so as to reallocate more evenly the incidence of the bombing losses. More likely, probably, is the easy way out of inflation via the printing press. The recipients of the monetary compensation payments will then scramble to exchange their payments for a share of the surviving real assets of the community. On balance, compensation seems almost certain to be highly imperfect. I might mention that in the Philippines the real value of the compensation payments was cut about two-thirds by the monetary inflation.

If, on the other hand, an insurance plan with good coverage is in effect, financial conditions will be somewhat easier, largely because the cloud of uncertainty as to ownership and solvency will not overhang so large a proportion of the economy. While a temporary moratorium may still be required because of the disruption of financial relationships, debts of covered enterprises suffering bomb damage will presumably be promptly paid from the insurance indemnities the Government will make available. The insurance agency of the Government will naturally have taken considerable precautions to preserve evidence of title to insured properties.

After the expiration of the temporary moratorium, uncovered enterprises suffering bomb damage would in a large fraction of cases be declared bankrupt--the penalty for their lack of foresight in not taking out the insurance. Similarly, those who have extended credit to such firms will suffer for the same reason--creditors could have insisted that their debtors take our war damage insurance on the assets needed to permit repayment of the debt. Alternatively, creditors themselves might have been offered a form of coverage for accounts receivable and similar obligations, in which case that form of protection would also have been available to them.

It is quite important, however, to note that compensation could not be granted to noninsureds without breaking faith with those who have purchased the insurance policies and paid premiums thereon. There will also be an enormous problem of financing the insurance repayments, but the existence of reserves may ease it somewhat; and the presence of records should provide better data of property ownership if a capital levy is necessary.

It will be clear, I think, that I have been barely able to touch upon issues of truly overwhelming importance and difficulty. The preservation of the basic outlines of our democratic free enterprise system is one of those things which we cannot take for granted after atomic attack.

In view of the urgency and the difficulty of the problem, it is regrettable for me to have to say that so far as I know, and to this date, these limited remarks of mine represent close to the furthest extent of thinking on this range of subjects so far as publicly available information is concerned. An urgent research effort is needed to examine the financial impact of war destruction in Britain, Germany, and Japan; to relate this evidence to the probable conditions of bombing attack on the United States; and then to recommend protective measures.

Very likely, research should center on modes of preserving the functioning of the banking system after attack. The balances of the banking system at any moment of time represent an enormous fraction of the aggregate value of wealth claims held by property-owning individuals and institutions. In addition, the balances at banks represent that portion of wealth which is most volatile and so will be hardest to reconstruct after the event.

Furthermore, the banking system itself may either greatly facilitate rehabilitation or operate as a tremendous drag upon it. Imagine, on the one hand, that after the bombing disaster, firms know that their bank balances are intact and available upon demand, even if at makeshift locations. Imagine also that Government measures of credit or monetary control with respect to these balances can be put into effect through a functioning system which reaches every individual and enterprise in the Nation. In contrast, now, suppose that the great majority of America's important banks have simply vanished, that no records have been preserved or successor locations designated, that even the survivor banks do not know whether or not they are solvent. Such a mess would probably dictate, as I indicated above, sweeping the entire preexisting banking system into the limbo of moratorium. This is an obvious field of study for the Federal Deposit Insurance Corporation, which is supposed to insure bank deposits, and for the Federal Reserve System, with its overall responsibility for the functioning of the Nation's financial system.

I may mention that, so far as I know, aside from some sporadic attempts by banks here and there to provide for preservation of records in the event of attack, the only real measure adopted on a national basis has been the provision of reserves of currency in the neighborhood of some of our large cities. Such a measure is not entirely without value, but it is a pathetically inadequate response to the overall threat to the Nation's monetary system. I was happy to learn recently, however, just yesterday, as a matter of fact, that the Federal Reserve System, at the request of the Office of Defense Mobilization, has been devoting some attention to these questions; and, if all goes well, there will be a draft proposal covering this range of problems in readiness for public consideration in the relatively near future. So perhaps things are looking up.

These last remarks are, however, somewhat tangential to our main topic of damage insurance and compensation. Let me summarize the main points made under the heading of the postattack significance of the alternative possible measures we have been considering.

1. In the absence of an insurance plan, a credit crisis in the form of a wave of bankruptcies would sweep the economy. This would probably dictate at least a temporary moratorium on prebombing obligations. In principle, payment of compensation would permit repayment of the obligations under moratorium, but in practice the procedure is likely to be highly imperfect, and great inequities will result.

2. A preexisting insurance plan would ease a number of these problems without by any means eliminating them entirely. In particular it should make it possible eventually to remove the debt moratorium and to restore the normal functioning of the credit system. In addition, better record survivorship seems almost certain if an insurance plan is in effect. However--and this is a problem--compensation for noninsureds could not be provided, in fairness to insureds.

III. Insurance and Compensation Alternatives Evaluated.

My discussion so far has compared the consequences of a number of different policies, first, in promoting or hindering adaptation of our society to the increased bombing hazard through reduction of vulnerability; and second, in easing or making more difficult the problems of recuperation from attack. As between these two, I regard the preattack considerations as the more important, primarily because the difference in the implications of the alternative proposals can quite clearly be traced. In the exploration of the postattack world; I consider my remarks to be so conjectural that I would be rather reluctant to take a strong position on the basis of supposed differences between compensation or insurance alternatives under postattack conditions.

With this general framework, I would like to summarize, as tersely as I can, my views on a few of the possible alternative damage compensation policies.

1. War damage insurance with rates proportioned to risks. Potentially excellent in inducing reduction of preattack vulnerability. Satisfies equity considerations in permitting sharing of the risk, but only where foresight is exercised in purchasing the insurance. Existence of reserves will facilitate noninflationary indemnity payments. Possibly objectionable in requiring harsh treatment for noninsureds, and perhaps in providing great scope for bureaucratic discretion.

2. As against this is the second main alternative--the promise of simple compensation. Completely perverse in preattack period, discouraging all reduction of vulnerability. Satisfies equity in risk-sharing, in principle, but compensation will be highly imperfect in practice.

Aside from the two main alternatives, there are a number of other alternatives on which I will make a brief comment or two:

1. Insurance but without risk differentiation will be perverse in its preattack effects.

2. Another possible variant is a vulnerability tax. If coupled with the promise of compensation, this comes down to compulsory insurance.

3. Another possible variant is insurance at equal rates, but with differentiation taking the form of differing percentages of loss indemnified, this percentage to vary directly with the extent of protective measures adopted. However, this is logically equivalent to war damage insurance with rate differentiation according to risk.

Two other important possibilities are worth explicit mention:

1. An announced policy of no compensation. As in the case of insurance with differentiation, an announced policy of no compensation would be beneficial in its effect on preattack vulnerability. However, most people would consider it objectionable on grounds of equity.

2. Finally, the present situation. The existing situation, which is no policy at all, is actually not necessarily bad. Or at least it is better than a policy of definitely promising compensation. The preattack influences are mixed, depending upon property owners' speculative views toward compensation prospects. No commitments run over into the postattack period, which may be an advantage.

IV. Effectiveness in Encouraging Reduction of Vulnerability.

In view of the fact that the main import of my discussion is that the preattack effect of alternative insurance or compensation measures in promoting or in hindering a reduction of vulneratiblity is the dominating consideration, some comments are probably called for to indicate how powerful such an effect can be.

The first impression of many critics seems to be that since, for example, the locational decisions of a firm are the resultants of a great many factors, a mere difference in insurance premiums is unlikely to have a great effect for instance, in causing a firm to locate in Idaho instead of in New York City. This argument, I think, is misleading on a number of counts. In the first place, the differences in premiums may be more substantial than many envisage. Premiums might range, as I have estimated elsewhere, from essentially zero for exceptionally safe structures and locations to perhaps as high as 15 percent of value for a flimsy fire trap in a prime target area. Secondly, locational decisions are the most drastic and not necessarily the most efficient ways of influencing vulnerability. Firms will also compare differences in insurance premiums with the cost of more limited measures, like more powerful construction or better fire protection. Finally, it does not follow that all possible vulnerability-reducing measures should be adopted. Some protective measures are too costly in the light of their probable returns.

It is not to be expected, therefore, that premium differentials in war damage insurance will modify the outcome of all decisions. Ideally, what is desired is to shift investment decisions in the direction of reducing vulnerability wherever such a reduction promises a greater gain to society than the cost thereof. In an insurance plan with rates properly differentiated as to risk, the premium differences are the approximate measure of the expected gain in safety; and the dollar outlay required of the firm to adopt protective measures indicates the cost. So that on balance I would maintain that decisions comparing these two would be influenced to just about the right degree.

Thank you.

CAPTAIN SAUNDERS: We are ready for your questions.

QUESTION: Doctor, you spoke of insurance as being less inflationary than compensation, and yet with the destruction there will be much less goods and services to buy with the same amount of money that was accumulated ahead of time, whereas with compensation it could be reduced. Would you care to comment on that?

DR. HIRSHLEIFER: Well, I think that's a shrewd observation on your part. That is to say, I know there's a weakness in my argument here that I didn't attempt to elaborate on fully. The compensation payments would not be inflationary in principle if they could be financed entirely by a capital levy. I assumed that this would be so impractical under the emergency postattack conditions that the payments would have to be financed probably by inflationary measures; (the printing press).

Now, that insurance is somewhat less inflationary than compensation if financed in this way can be seen by considering for simplicity--of course it's ridiculous, but it illustrates the principle--that the insurance agency takes in the premiums and with the premiums buys real property which it holds in reserves, like watches, jewelry, and so forth. Now, of course, that's not practical, but this effect could be achieved by a less ridiculous measure. If the insurance company does hold property in some form that permits it to be directly of value without further monetary injections into the system, the indemnity payments would be made, at least in part, from reserves. One of the students has suggested to me just outside that these reserves could be held in other countries. I think that gives you some idea of ways of possibly doing it in which a real reserve would be available which would permit indemnification without monetary injections.

QUESTION: I have been a bit intrigued with your thought that differentiation in insurance rates would encourage people prior to an attack to take greater measures to protect themselves. From everyting that we have learned, to protect against an atomic attack would require something like at least a six-foot concrete wall. I am wondering how many people you think would be encouraged to build underground houses with six-foot concrete walls; and how many people in New York City, for example, and perhaps in twenty other large cities, would be encouraged to tear down the building and build underground, well, hell-scrapers, you might call them--I just coined that word--in order to get lower insurance rates.

DR. HIRSHLEIFER: I won't say whether that's shrewd or not. I did attempt to address an argument to just this question. There are degrees of protection, of course. A man in a six-foot concrete shelter is better off than a man in a four-foot concrete shelter; but that man is also better off than somebody else.

Now, it does not follow that some type of protection which might be considered absolute is feasible for any large number of people; or--and this is really a vital point--that it is desirable. There are modes of protection which, while perfectly feasible, are simply not worth enouth to society to introduce in view of the nature of the risk.

Just to consider an example, it might cost five million dollars to protect, in an absolute sense, my house worth twenty thousand dollars, but it's pretty clearly not worth society's while to do so. It's only worth society's while to do so if the value of the probable saving due to the diminution of vulnerability is essentially equivalent in magnitude to the cost of achieving that reduction of vulnerability.

It is my argument that an insurance differential would, so to speak, set the right order of magnitude. People would be induced to undertake those measures which would repay their cost in terms of reduced vulnerability, whereas those measures which were excessively costly in view of the probable value of the reduction in vulnerability would not be induced.

QUESTION: If we had a private setup going which was offering insurance at graded rates depending on risk, would there not be quite a reluctance, let us say, to use that unless the Government stood behind it in some way in case of saturation, that is, the insurance company having a policy with the Government of some kind? Would you comment on that?

DR. HIRSHLEIFER: Again, one of the students caught me outside to suggest that this might be done on a private basis. The question that would arise on a private basis is that if war came in the early years of the scheme, there wouldn't be enough money collected to repay the damage. Of course, if war was postponed indefinitely far into the future, the scheme would be quite profitable.

Well, because of this difficulty--that the sort of man who makes up an insurance company is not the kind of man who really likes to gamble--insurance companies don't look very kindly on this sort of scheme. So they would undertake it only as agents of the Government, which would essentially underwrite the responsibility for payments under it. This is what was done in World War II.

QUESTION: In other words, you think that we couldn't have the Government back it up and still have it done on a private basis?

DR. HIRSHLEIFER: Well, it could be done through the agency of private companies, who might bear a minor fraction of the risk. But

I think that in the last analysis it would be difficult to find reputable people who would be willing to undertake this on a private basis, and legislatures and the Government would be unwilling to approve it. As you know, insurance is a very regulated industry. So that I think in practice it would have to be primarily or almost entirely a Government program. You see, what's involved essentially is taking the surviving national wealth and redividing it among the survivors. That's a drastic operation, and I think it would have to be done primarily on a Government basis.

QUESTION: What system do we have in effect today for the protection of titles, ownership, and so forth? It's a two-way proposition with the banking system and individuals, where one has to prove against the other.

DR. HIRSHLEIFER: If you mean insurance systems, practically all property insurance has a war exclusion clause and so would provide no protection against the kind of risk I have been talking about.

QUESTION: No. I am talking about titles of ownership, like titles to real property and titles to stocks.

DR. HIRSHLEIFER: Well, you can insure titles against peacetime risks, but not against wartime risks. That's as far as insurance goes.

There are, of course, real modes of protection. Certain, shall we say, progressive corporations have made efforts to do such things as taking records of their stock ownership and burying them in a hole somewhere in the hope that they would survive bombing. Some banks do that with respect to bank accounts. That, of course, is really probably the most important single title to wealth that we have--what we have in our bank accounts. But 98 percent of all titles are entirely uncovered either in a real or in an insurance sense against that type of risk.

QUESTION: In your discussion here you have drawn an analogy between other risks which are in the nature of an accidental destruction of wealth. But we are dealing here with another kind of thing, which is in effect a residual risk left after we have taken all the measures we can to insure the defense of our country. This introduces a great unknown. We spend a lot of money on national defense presumably to reduce the risk to a considerable degree. We have Nike installations around the major cities, and these too should reduce the risk by, let us say, a reasonable amount. To that extent the Bureau of the Budget's position could be a very valid position--to place our reliance on an active reduction of the risk rather than a passive one of insurance. You haven't mentioned that. I wonder if you considered that in your discussion.

DR. HIRSHLEIFER: That question is implicit in a number of the remarks I made. What I think is assumed is that we, the taxpayers, would decide by a comparison of the overall return versus the overall cost what magnitude of military protection should be chosen. But that is quite aside from the question that, given any particular degree of military protection you cite, the type of promises that you make with regard to compensation for property will determine how the individual components of our society react to the military environment created by the enemy threat and the existing degree of protection.

Given an X-wing Air Force and some unknown number of atomic bombs in the possession of the enemy, I can still react in very different ways just with my own personal funds on how I protect my property. If the Government gives me an implicit or an outright promise of compensation no matter what I do, I would be very unlikely to spend my money protecting my property. If they do not give me a promise of compensation, but instead offer me insurance with rates differentiated to risk, I would, if I were rational, seriously consider the insurance saving versus the cost of taking the protective measures.

QUESTION: I would assume from what you say that the important thing for us to do now is to make clear what the intention of the Government is in the event that these hazards materialize, so that we can wisely take steps both in regard to active defense and our personal, or, you might say, our passive measures.

DR. HIRSHLEIFER: Well, you sound like the type of individual who likes everything to be clear. In this case the clarity might actually be a disadvantage. At least, if they come up with a very clear promise of compensation, I would say the effect would be much worse than the present situation of confusion and the lack of clarity. So I would agree that if they come up with the true, correct, ideal policy, whatever that may be--and none of us know it--then it would probably be best to have it clear. But an unclear bad policy is probably better than a clear wrong one.

QUESTION: I am going to ask an abstract question and I expect an abstract answer. My objective is to determine the cost of compensation to the Government. I assume that it would have to be predicated on how many cities were attacked and in what fashion. I would like to ask these two questions: You mentioned a 140 billion dollar insurance level during World War II. Is there any approximation of the percentage of this 140 billion dollars against the total of insurable property under the insurance system? The second part is this: Is there any approximation of the amount of property that would be insured, or the amount of property that would be compensated for, in the event of an attack?

DR. HIRSHLEIFER: I'm not sure I got the second part of your question.

QUESTION: What is the magnitude of the present-day property that would be either compensated for or insured?

DR. HIRSHLEIFER: A very, very rough figure of the magnitude of the property value subject to destruction is on the order of one thousand billion, a nice even trillion dollars. So that in World War II they really got a sensationally good coverage. The rates, of course, were very low; but then the risk of damage was not very great either.

Now, as to how the compensation might take place, well, the first question is: Of that one thousand billion, very roughly, in insurable property, how much destruction will there be? Let's say that there's 10 percent destruction. That would be one hundred billion. Of course that would set the order of magnitude of the compensation payments.

One important consideration here is that if 10 percent of the Nation's property is destroyed, then it's pretty clear that you could compensate those who had lost property only on the basis of 90 percent of the value held. If you compensated them on the basis of 100 percent, they would be better off as compared with the rest of the community. So it would come down to 90 percent of 10 percent.

QUESTION: Could you define, please, sir, the types of property that are accounted for in this one trillion dollar valuation? Is that all kinds of property, both personal and real?

DR. HIRSHLEIFER: The measurements on that are really not too good. It was Mr. R. W. Goldsmith who made these estimates. They purport to refer to the entire value of the physical property of the Nation. That means, of course, reproducible physical property, such as buildings and so forth. It would exclude land values. It would include the property value of cattle, but exclude the property value of human beings. Incidentally, that latter is, really, when you think about it, probably the Nation's prime resource; but it's uninsurable as property.

Now, this raises a very serious question as to just how you might provide life insurance. It's so serious and difficult a question that I just have really not thought about it.

QUESTION: I wonder if you would discuss just very briefly the techniques for granting compensation in Europe after World War II.

DR. HIRSHLEIFER: I have attempted to get information on that, but it really is fairly sketchy.

In most of the countries of Europe and in Japan the principle of indemnification was accepted. This is a rather important consideration, because, as you know, one of the policies I would like to have considered is a deliberate policy of no compensation at all. The almost universal acceptance of the compensation principle suggests that a policy of no compensation would be politically unacceptable.

The British offered voluntary insurance for personal property after providing a certain minimum of free insurance. In this respect it was like the American plan. We have no free insurance. Ours also are voluntary insurance plans. The other countries of Europe, so far as my recollection goes, and also so far as the information available to me goes, had systems of indemnification without an insurance feature.

Now, of course you might say that's bad, because how can you achieve a reduction of vulnerability with a promise of indemnification? But the insurance plans which were adopted by both Britain and the United States did not go into effect until the war had actually begun or was very close. And so it was really too late to achieve much of a reduction of vulnerability. The only hope of reducing vulnerability is to have insurance in effect well in advance of war.

So I would argue that from the point of view of achieving a real reduction of vulnerability in World War II there was not very much difference between the insurance and the indemnification schemes. The countries that were more vulnerable to damage felt it necessary to have indemnification for everyone. The countries that were less vulnerable, like the United States and to some extent Britain, had a certain amount of purchasable insurance; but the British had this free insurance up to a certain amount for everyone. Insurance for business property was compulsory in Britain.

QUESTION: Let us assume for the moment that this indemnification at varying rates in order to induce people to protect their property is a good idea. Let's consider fire insurance for the moment. Suppose a dwelling house that is worth $10, 000 can be insured for three dollars a thousand. Let's say that if a man puts a sprinkler system in, the rate might drop to one dollar a thousand. He could save twenty dollars a year that way. There would hardly be any inducement for him to put that sprinkler system in, because the saving would be so slight and because the risk would be rather low that there would be a fire in that house.

Now, with this war destruction aren't we operating now on the common man's opinion in regard to his wealth? He is operating on such a low risk on any sort of insurance that would be offered that any variation in that rate due to protective action that he might take in the case of a dwelling would be so slight that he would never in his lifetime pay off the cost. It wouldn't really be feasible to offer rates depending on what the individual insurance company believes to be the degree of risk, say, 25 or 30 percent. If the rate was two hundred dollars a thousand a year and he reduced it, let us say, to one hundred dollars a thousand, he would have a hundred dollars to play around with. Wouldn't the saving on a dwelling be so slight that there would be no inducement in the rate reduction to take protective measures?

DR. HIRSHLEIFER: Well, that's sort of a psychological question. People on the basis of rational or irrational considerations will make their own valuation as the degree of risk. Similarly the War Damage Corporation, if that were reactivated, would make an imperfect, perhaps, but nevertheless would have to make a real estimate of the overall degree of risk, that is to say, the risk of having a war, the risk of a bombing occurring if there is a war, and so forth.

What you say may possibly be true. In that case, of course, many people would probably tend to stay out of the insurance plan entirely. Or if the insurance were based on an estimated risk of war occurring next year, let us say, of 10 percent, and practically all the people in the country thought: "Oh, my goodness. The risk of war is very remote, say, one percent," it's clear that their estimates of what the true rate should be would be much lower than the rates which would actually be in effect. So if they had more confidence in their own judgment rather than the judgment of the War Damage Corporation, they would tend to stay out of the program.

Now, I don't see just what can be done about this. Nor do I agree in principle that people will always underestimate the risk of war. I think on balance people's expectations would be distributed all around. Some would overweight it and some would underweight it. So it's difficult, you know, to make a categorical assertion that the effect would be predominantly one way or predominantly the other.

I would like to mention that one rather important question which has been raised is whether perhaps the insurance plan should be made complusory. If this were done, you see, we would eliminate the problem of having all these different people making their own decisions and possibly going wrong. Well I just don't like compulsory things in general, and so I kind of suppressed it and didn't really talk about it.

But it is a rather serious possibility. Logically it would come down to a tax on vulnerability, which is an interesting idea. Compulsory insurance would come down to very much like a tax. In that way you could get around the problem of people having wrong expectations, if you were sure your expectations were right (and maybe they are).

QUESTION: I wasn't thinking so much of whether or not they bought insurance. I was thinking of whether or not those buying insurance would take protective measures.

DR. HIRSHLEIFER: It really all comes down to the same thing. It means this: If the insurance company simply has made an error in the calculation of the rate and has not given enough of a discount for sprinklers, then people would be inclined not to put in sprinklers. It's just a comparision of the magnitude of the saving, which in turn is based upon the estimation on the part of the insurance company of the probabilities of war and the probabilities of loss given the adoption of various degrees of preventive measures if war should occur. I agree; my estimates may differ from those of the insurance companies, and I will be influenced in ways that they don't anticipate.

QUESTION: Going back to your statement that the problem is the dividing of what's left with who's left, you are going to have to go one step further than that, because the attack is only step one. The next step, of course, is occupation. So it may be that before we can finalize this business, we will have to ascertain the reconstruction policy of the Kremlin.

DR. HIRSHLEIFER: That raises a very serious question in more ways than one. Without worrying directly about what the Kremlin's policy may be, let me mention the impact of that upon war damage insurance.

The Government can promise me insurance, if I take it out, but I may choose not to believe their promise. I may say: "Well, very likely the Kremlin will be in power and they won't honor the obligations of the U.S. Government." Or even the U.S. Government might be in power and might not choose to honor its obligations.

These are very serious considerations. I don't think they are fatal, but they are the most troublesome, the most serious, problems, I would say, with regard to introducing a war damage insurance policy--that people would be, at least in part, justified in doubting whether the Government would make good on its promise to repay those who have purchased policies.

And then there's the opposite fear, which in a way is perhaps even worse, namely, the fear that the Government would then go ahead and compensate everybody whether or not they had purchased the insurance. Of course, that would just be terrible. You have been paying premiums for twenty years and that guy down the street hasn't and you're both compensated.

I am sure that both these fears would tend to weaken people's participation in and response to war damage proposals. So that is a very important point indeed, and I can only say it is a serious weakness and I can't think of how to get around it. It's sort of too big for us.

DR. HUNTER: In view of all the speculative elements entering into this matter of war damage insurance before the attack, perhaps it would be wise to concentrate on the really concrete and serious problems of the postattack situation--the effect of various kinds of compensation upon the speed of recovery and rehabilitation. Would you comment on that?

DR. HIRSHLEIFER: I agree that those questions are very important and I tried to devote approximately half of my talk to each topic--half on the preattack and half on the postattack questions. The trouble is that the preattack forces are at work in peacetime. We can all envisage the peacetime circumstances. So I have some confidence in predicting that there would be substantial favorable effect of war damage insurance with rates differentiated according to risk, and unfavorable effect of simple compensation.

But just what would happen in this insane world after the attack is so difficult to imagine that I simply don't have much confidence in such thoughts as I have on the subject. So I have kind of stated them to the extent that I have them, but I said I place less weight on them not because the subject is less important, but just because I felt that what I had to say was so dubious and so conjectural.

DR. HUNTER: I would like to comment further there. Suppose you got people all worked up and they took out a lot of war damage insurance. Equity considerations would require that after the balloon went up, these folks be compensated and the others not.

DR. HIRSHLEIFER: That's right.

DR. HUNTER: Then you could say that the Government would be faced with what we may regard as the primary and critical problem of how you are going to get back into production. Then considerations other than that of compensating everybody without reference to whether in respect to insurance they were the wise virgins or the unwise ones would enter into the question almost inevitably. You might have governments necessarily repudiating this conception of insurance in the face of the overriding need to restore production, might you not?

DR. HIRSHLEIFER: I would hope not, because if everybody reasoned the same way, it's clear that nobody would take out the insurance. Nevertheless--and this is a hope--I think there are two aspects to your question. The first is whether in fact what you say will really be true, and the second is whether potential purchasers of insurance will think so. They are not entirely the same question, but there is a certain relation between them. So I say, I hope that it wouldn't be true.

Now, I think it is clear to everyone that it would certainly be most desirable, if it were at all feasible, to provide a certain minimum of maintenance to people, give them a certain amount of cash, so they can buy food until such point as they can be reintegrated into the productive structure and get a job giving them an income.

But remembering that an enormous fraction of property is held by those "soulless" corporations, I can easily see that people would say: "All right. Standard Oil--if they fail to take out insurance, it's just too bad for them." With regard to individuals, of course, people's sympathies are more easily worked up. People seem to forget that Standard Oil is owned by individuals. But, at any rate, I think the effect you mentioned would be more likely with regard to the personal property holders as individuals than with property holdings of corporations, which account for a much larger fraction.

QUESTION: Just to follow up on this last point, did I understand you to say that sympathy would probably be more toward the individuals and their property rather than toward large corporations?

DR. HIRSHLEIFER: Individuals who failed to take out the insurance would probably get less harsh treatment than "soulless" corporations who failed to take out insurance.

QUESTION: Suppose that we had a tremendous attack on this country. From the standpoint of Government and national strength, it becomes predominant in such a situation, I am inclined to believe, that it's not only individuals staying alive and small investors, but also getting your overall economy back. That means getting our businesses and our big industries going. And regardless of considerations of incentives and motives, those are going to be met if we are going to get back on our feet. In other words, should not more weight be given to that very vital consideration of getting our economy back and the motivating influences which would get it back?

DR. HIRSHLEIFER: Well, the part of my discussion concerning the postattack measures has been directed to the question of what is an efficient way of getting the economy back operating again.

Now, if we fail to compensate someone who has not taken out insurance, that, of course, doesn't mean that something goes up in smoke that was there before. All it means is that a certain set of property owners, having chosen to take a chance and not buy any insurance, are now bankrupt. Their property will be taken over by their creditors, who will then operate it. You can't freeze an economy and say, "Nobody is going to go bankrupt," obviously. So what would be involved and what I would like to do is stop a wave of bankruptcies which is not due to any real failures on the part of the people involved, but simply due to a credit crash, mostly due to the rigidity in the banking system. That I would like to stop through emergency Government intervention. But where the bankruptcy of a concern is due to a lack of foresight in not taking out insurance which it could have taken out, I don't think it's reasonable to guarantee it against bankruptcy under those circumstances.

QUESTION: It wouldn't necessarily follow that there would be a production loss in the overall?

DR. HIRSHLEIFER: Certainly not. The creditors who could not be repaid would, of course, fall heir to the surviving assets of the corporation.

CAPTAIN SAUNDERS: I think this is probably a good point to end the discussion. Thank you very much, Doctor Hirshleifer, for your very interesting talk and very able presentation of the subject. I wish we had more time to pursue the question period further.

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