THE CONSUMPTION OF CAPITAL IN AUSTRIA[1]

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THE Austrian theory of economics has often been reproached with over-abstractness and remoteness from real life. The Austrian theory of *consumption of capital* is, unfortunately, more than an unreal construction based upon unreal assumptions, more than a plaything for the mental gymnastics of scholars; it is an attempt to explain very real facts. The discussion of capital consumption and economic decline was provoked by the course of events observed in Austria during the war, during the post-war inflation, and during the years of social reform.[2]

Physical destruction and value destruction of capital. What is the connection between *physical* destruction and *value* destruction of capital? The two things do not always run parallel. When capital equipment is physically destroyed — say by war, by fire, by wear and tear — its value is gone simultaneously. But the loss in value might occur before the capital goods are physically impaired. Equipment might be rendered valueless by certain economic changes. It is then, so to speak, designated for progressive dilapidation; it does not pay to maintain equipment of no value; hence the physical destruction will follow the value destruction after a considerable lag.

There is a case in which the capital values in terms of money decrease without any physical capital destruction following: that of the fall in costs of reproduction. For some purposes the statistician who records values of capital will find it adequate to correct the figures for changes in costs of reproduction.

Sources of information about changes in capital stock. In a growing economy, factual information about capital formation is obtained in three ways: (1) by figures concerning new physical equipment, especially activity in the construction industries, (2) by figures concerning the supply of money capital from the various sources, and (3) by figures concerning the valuation of the existing capital of corporations.

For a declining economy only the third way seems practicable. The difference between the valuation of capital at different points of time is the measure for the decline. The reasons for such a decline are to be sought either in physical destruction of capital, or in depreciation by changes in the horizontal economic structure such as changes in demand, or in the consumption of capital.

The Austrian Institut für Konjunkturforschung (Institute for Business Cycle Research) undertook such a comparison of the valuation of stocks over a period of 18 years. A report was published by Dr. Oskar Morgenstern in the *Zeitschrift für Nationalökonomie.* Some of the results are shown on Table 1 (page 15).

The valuation arrived at for corporation capital in Austria in 1913 is compared in the table with the valuation in 1930. Both sums were obtained by combining the capital values of all Austrian corporations the shares of which were listed on the Viennese stock exchange. The value of capital of each corporation was calculated by multiplying the number of shares issued by the average price during the whole year. Corporations which existed in 1913 but had disappeared in 1930 were not included in either sum. Only the surviving firms or merged firms were taken into account. This procedure concealed the loss of capital of corporations which disappeared completely, but it was imposed by the fact that some corporations had moved, following the dismemberment of the Austrian monarchy, from Vienna into the capitals of the new nations. The investigation was therefore confined to all Austrian corporations which existed in 1930. Those which had been founded later

[1] This article is based upon an address delivered at a meeting of the Boston Chapter of the American Statistical Association on December 3, 1934.

[2] *Literature:* Professor Ludwig v. Mises was the first, so far as I know, to point to the phenomenon of the consumption of capital. As a member of a committee appointed by the Austrian Government (including two other committeemen, Dr. Dollfuss and Dr. Palla) he also emphasized comprehensive factual information. See *Bericht über die Ursachen der wirtschaftlichen Schwierigkeiten in Oesterreich* (Vienna, 1931). An important investigation of the capital of Austrian corporations was made by the Institut für Konjunkturforschung. See Oskar Morgenstern, "Kapital- und Kurswertänderungen der an der Wiener Börse notierten österreichischen Aktiengesellschaften 1913 bis 1930," *Zeitschrift für Nationalökonomie,* III (1932). For theoretical expositions see F. A. v. Hayek, "Kapitalaufzehrung," *Weltwirtschaftliches Archiv,* XXXVI (1932), and Erich Schiff, *Kapitalbildung und Kapitalaufzehrung im Konjunkturverlauf* (Vienna, 1933). For a short survey on the Austrian experience see Nicholas Kaldor, "The Economic Situation of Austria," *Harvard Business Review,* XI (1932).

than 1913 were included in the statement, the initial capital being added (in our table) to the 1913 valuation.

CAPITAL CONSUMPTION AND ITS MEASUREMENT

Is the stock-market valuation competent? The first question which might be raised is whether the commercial market-valuation is to be considered competent by the statistician. It may be urged that capital equipment which has lost its economic value by changes in demand might well regain it in the future. If business men, however, expected such revaluation it would show in the present valuation. But the markets are often blamed for being bearish. Should not a valuation as the outcome of a bearish market be accordingly corrected for "bearishness"? The statistician who would do so would behave, of course, as a "bull," and I doubt that he would do so if he were likely to lose money by his speculation.

The next question to be dealt with is whether the stock valuation is significant for corporations which raised their capital partly in ways other than through the issue of equities. The answer depends on the purpose of the investigation. For calculations of absolute amounts of capital, the stock values alone would certainly be insufficient. For estimates of relative changes in a growing economy, it would be misleading to neglect bond issues and other forms of debts of the corporation because it might happen that an increasing portion of capital was raised by borrowing. In a declining economy, the error in estimating relative changes in capital values by stock values alone would not be so large for the following reason. If a corporation issues bonds to finance good investments, the value of the equities will not be decreased at all. The stock value is impaired if the loan is used for bad investments or for covering losses. The shrinkage of the share values would show the loss of capital. For the present investigation into capital values of Austrian corporations the whole question is not of importance, since issue of bonds by private corporations has been unlawful in Austria. Only a few semi-publicly owned utility corporations were permitted, by special decree, to raise funds by that means.

Maintenance of capital. A community which maintains its capital intact meets the different kinds of capital depreciation principally in two ways. Normal depreciation by wear and tear and that part of depreciation normally due to technological obsolescence are met by reinvestments out of replacement funds. The depreciation which results from unforeseeable dynamic changes is met only by investments out of new savings. A certain portion of new savings is therefore needed for offsetting unavoidable but unforeseeable capital depreciation.

Do great changes in demand really depreciate, really reduce the value of the capital of the community as a whole? Is it not true that what the one industry loses another industry must gain? The increased profits of the latter are capitalized, of course. Does this make good the capital loss of the former? It does not. The increased quasi-rent in the underequipped industry results in an increased demand for liquid funds available for investment. If there is not an increased supply of savings to provide these funds the rate of interest is raised, and the higher rate of capitalization lowers present capital values. We mention these "abstract" ideas for three reasons. First, a good deal of capital loss in Austria is to be traced to changes in demand resulting from the short-sighted protectionism in the new national states succeeding the old monarchy. Second, capital consumption is in itself a change in demand, the demand for consumers' goods being increased at the expense of that for producers' goods; hence capital consumption reduces capital directly (by neglect of maintenance) and indirectly (by decreasing the demand for the output of construction industry). Third, in the absence of new saving, mere shifts in demand involve economic decline; in other words, an economy which is stationary in respect to the supply of savings is declining in respect to its capital base; or, to put it another way, quick change in the objects of consumption without the emergence of new savings is itself a form of consuming capital.

The capital of corporations in Austria. Inspection of our Table 1 reveals an enormous loss of corporation capital in Austria. Not only the difference between the 1913 value and the 1930 value must be considered as lost. From 1913 to 1930 new funds were raised to increase the capital of corporations. In order to see what amount ought to be in existence if all capital invested had been maintained, we must add the capital in-

creases to the initial value. The additions are shown separately for the time of war and inflation, *i.e.*, 1913 to 1922, and for the time after the stabilization, *i.e.*, 1923 to 1930. An amount raised in crowns in the summer of 1921 is not equivalent to the same amount in crowns in the summer of 1922, because of the progressive inflation. In order to make them comparable and additive, the Research Institute had to "deflate"

TABLE 1. — VALUE OF CAPITAL OF CORPORATIONS
(Unit: million schillings, gold, except last column)

Corporations	Capital value 1913	Further investment		Value 1913 plus investment 1913–30	Capital value 1930	Loss (*Unit: per cent*)
		1913–22	1923–30			
Banks	1718	649	380	2747	347	87
Transportation	507	54	30	591	57	90
Metal industry	886	260	93	1239	218	82
Breweries and sugar industries	104	5	13	122	109	11
Other industries	1018	204	231	1453	560	61
Total	4233	1172	747	6152	1291	79
Capital value, October 1931					784	87

Data from the Oesterreichisches Institut für Konjunkturforschung; see Oskar Morgenstern, *loc. cit.*

them according to the gold values of the time of issue of, or time of payment for, the new shares. This correction is rather favorable because the foreign exchanges and gold advanced much more quickly than commodity prices and costs; so that the corporations were able to buy relatively more than is expressed in the deflated values of capital increments.

The pre-war value plus additional investment, converted into Austrian schillings, amounts to 6152 million schillings. In 1930, the value was, instead, only 1291 million schillings. That means that only less than 21 per cent of the capital had been maintained, while more than 79 per cent had been lost. If we look at the values for several months after the breakdown of the Credit Anstalt only 13 per cent of the capital had been maintained and 87 per cent had been lost. Later figures look still worse.

What caused such losses? The difference is so frightening that we look once more for any major errors. Have we forgotten to correct the values for a deflationary fall in prices? There is no reason to do so; neither the prices of Austria's products nor the costs of reproduction of capital equipment have fallen during the time in question. Where, then, is the enormous difference? What happened to the 79 per cent or 87 per cent of capital invested in Austria?

First of all, no earthquakes, no other abnormal catastrophes, no physical damages by the war, occurred in Austria. Second, changes in demand are, certainly, responsible for large depreciations of Austria's capital equipment. If industrial equipment is adapted to satisfy the demand of a 60 million people country and is then, by the tariff policy of super-nationalists, restricted to the demand of a 6 million people country, value destruction is unmistakable, while new capital is necessary to construct the plants for each national region. But this kind of destructive policy is far from sufficient to explain the loss. Not all industries were affected by the new protectionism, and nobody with a sense of proportion could trace all of the loss of Austria's capital to the new trade barriers. It is the consumption of capital which is the explanation of the disappearance of so great a portion of Austria's wealth.

HOW CAPITAL IS CONSUMED

Capitalists who want to consume more than their current income may liquidate capital by selling it to other people. If it is bought out of new savings then, obviously, the dissaving by some is offset by the saving by others. The individual consumption of capital is, under such conditions, no capital consumption of the community as a whole. If there is, however, insufficient new saving within the community to absorb the dissaving, capital from foreign countries might fill the gap. Import of capital, in this case, does not increase the productive capacity of the country but only compensates for the internal capital consumption. This was obviously the case in Austria. Money, borrowed from abroad, was lent (mostly through banks) to corporations to cover their losses or to pay their unearned dividends, or, at the best, to finance investments which were in reality replacements of outworn or obsolete equipment.

If neither savings from within the community nor inflow of capital from without makes up for the dissaving that goes on, then disinvesting begins. Disinvesting takes place in the form of using the replacement funds for consumptive

purposes rather than for renewals. What would induce the entrepreneurs to do so? We shall deal with various causes in the order of their historical relevance for Austria.

Miscalculation due to inflation. In spite of ordinary bookkeeping, inflationary price increases lead to insufficient replacement reserves. An example will make it clear. A manufacturer owned a plant worth one million crowns. He used to write off 100,000 crowns a year for depreciation; that is, ten per cent. As inflation raises prices and costs, and as the costs of an equivalent plant would run up to two million crowns, the customary replacement quota represents only five per cent; and the reserve, after the whole plant has been written off, allows the renewal of only half of the former equipment. If inflation raises prices to the fourteen-thousandfold, as was the case in Austria, the replacement reserve of a machine is just large enough to buy one new screw.

But does inflation not increase the profits and therefore the ability to build up reserves? I wish to emphasize that those money profits are delusive profits; if parts of them are considered real profits — that is, as a base for increased consumption — capital is consumed.

Capital consumption because of rising prices is still better illustrated in the case of working capital. A dealer bought a thousand tons of copper. He sold them, as prices rose, with considerable profit. He consumed only half of the profit and saved the other half. He invested again in copper and got several hundred tons. Prices rose and rose. The dealer's profit was enormous; he could afford to travel and to buy cars, country houses, and what not. He also saved and invested again in copper. His money capital was now a high multiple of his initial one. After repeated transactions — he always could afford to live a luxurious life — he invested his whole capital, grown to an astronomical amount, in a few pounds of copper. While he and the public considered him a profiteer of the highest income, he had in reality eaten up his capital.

Profits due to an increasing price level are only fictitious profits. If they are consumed, capital is consumed. This is one of the effects of inflation upon capital. Another one, the misinvestments of capital, is of greater importance in the case of credit inflation than of governmental inflation. Misdirection of capital due to credit expansion is a phenomenon too well known to need expounding to American readers.

Making and consuming fictitious profits was, probably, the most frequent method of consuming capital in Austria. A force which tended toward the same result consisted in taxing away profits.

Overtaxation of incomes. It has been frequently asserted that only indirect taxation which increases costs can have bad effects upon production. A hard blow to entrepreneurs' incomes by way of direct taxation is often, and it was in Austria, a strong force toward the consumption of capital. If a capitalist's income is too heavily taxed, he does not always cut down his expenditures correspondingly but rather nibbles on his capital. High income taxes are seldom a transfer of consumers' purchasing power from the rich people to the public, but more often a conversion into consumption of funds which otherwise would be saved, or (as in Austria) of funds which otherwise would be reinvested, and which are therefore disinvested capital.

A complete confiscation of profits would reduce the exchange value of corporation capital to zero, but would not necessarily imply actual deterioration of capital. If the owners of the capital equipment were prevented from consuming their yieldless capital; that is, if the state undertook the maintenance of all equipment and could do so with skill and prudence, we should be faced with a case of socialistic production. We mention this point in order to defend our exposition against an objection which lies near at hand; namely, that the confiscation of the return to capital would not involve deterioration of capital, though its stock-market value would vanish. Our expectations regarding the maintenance of capital in a socialistic system may be high or low; the case is irrelevant for Austria. The state cared only about the taxation of the returns and left the maintenance, or rather consumption, of capital to the discretion of its owners.

Overtaxation of production. While the income tax snatches the profits after they have come into existence, other kinds of taxation increase costs of production and, therefore, may prevent profits from coming into existence. An increase in costs of production tends, as every economist knows, towards decrease in production and employment. If the state is engaged in relief works and sys-

tems of unemployment benefits, more public expenditures ensue. If they are covered by taxation, increased taxes result. Increased taxes mean increased costs; increased costs, decreased employment. Decreased employment means increased public expenditure; increased public expenditure, increased taxation. Increased . . . *da capo ad libitum.* Or more correctly, *da capo ad*

TABLE 2. — PUBLIC EXPENDITURES
(*Unit: schillings per head of population*)

Year	Federal government	Municipality of Vienna	Total
1923.....	95	98	193
1924.....	124	177	301
1925.....	138	216	354
1926.....	155	241	396
1927.....	182	254	436
1928.....	179	257	436
1929.....	196	265	461

Data from *Wirtschaftsstatistisches Jahrbuch der Arbeiterkammer Wien.*

finem. The end comes when the whole capital is consumed.

The development of public expenditures in Austria may be seen in Tables 2 and 3. They show a rapid upswing. Table 2 gives the amount of public expenditures of the federal government of Austria and of the municipality of Vienna per

TABLE 3. — INDEXES OF PUBLIC EXPENDITURES, PER HEAD OF POPULATION, OF ALL MUNICIPALITIES IN AUSTRIA
(*1923=100*)

Year	Index
1923.....	100
1924.....	171
1925.....	230
1926.....	296
1927.....	355
1928.....	349
1929.....	379
1930.....	389

Data from *Wirtschaftsstatistisches Jahrbuch der Arbeiterkammer Wien.*

head of population. Table 3 shows the expenditures of all Austrian municipalities per head of population expressed in indexes with the base 1923. The zeal of all public bodies in increasing their activities was truly magnificent.

The numerous — at least at that time numerous — friends of public expenditures in Austria reiterated every day the high productivity of these expenditures and public works. I doubt by which indexes one should measure this productivity: by the increase in unemployment, or by the decrease in profits, or by the steady decline in the capital stock of Austria. The same indexes seem to be appropriate measures of the effects of another factor in raising costs of production: wage rates.

Forcing up wage rates. How efficient the Austrian trade unions, with their political support, and the employers' organizations were in driving up wage rates in their collective bargaining may be seen on Table 4. The movement is shown by indexes with the base 1914 for five different categories of labor. As in other coun-

TABLE 4. — INDEXES OF WEEKLY WAGES OF WORKERS IN FIVE INDUSTRIES
(*1914=100*)

Year	Building industry[1]	Furniture industry[1]	Bakeries[2]	Moving and storage trades[2]	Women workers in the metal industry[2]
1922...	51	41	..	..	..
1923...	94	70	94	123	75
1924...	124	93	114	169	90
1925...	147	101	134	176	120
1926...	147	106	136	184	120
1927...	153	108	150	197	120
1928...	153	117	156	206	145
1929...	164	122	164	216	145
1930...	172	128	164	216	145

[1] Data from *Wirtschaftsstatistisches Jahrbuch der Arbeiterkammer Wien.*

[2] Data from *Statistisches Handbuch für die Republik Oesterreich,* Bundesamt für Statistik.

tries, the wages in the building industry advanced most conspicuously. (The index in 1930 was 172.) Regarding an allegedly common wage practice in the building industry in the United States (the "kick-back"), it is to be mentioned that in Austria the contracted wage and the wage which is paid have always been equal. For a judgment of the wage increase in terms of real income it should be remembered that the index (with the base 1914) of the cost of living (in the annual averages) never exceeded 111.[1]

Forcing up wage rates forced up unemployment (Table 5). But why should it lead to cap-

[1] See *Statistisches Handbuch für die Republik Oesterreich,* Bundesamt für Statistik, 1925 to 1931.

ital consumption? Because of the simple fact that industries do not shut down before the losses from operation considerably exceed the losses

TABLE 5. — UNEMPLOYMENT AS A PERCENTAGE OF THE WORKING POPULATION

Year	Per cent
1925	9.7
1926	14.1
1927	15.5
1928	15.8
1929	17.0
1930	21.7

Data from *Bericht der Wirtschaftskommission* (Vienna, 1931).

from non-operation. That means that industry goes on producing at a loss, consuming its capital by borrowing (see Table 6), or by omitting renewals.

TABLE 6. — LOANS, ADVANCES, AND INVESTMENTS OF ALL AUSTRIAN BANKS EXCLUSIVE OF THE AUSTRIAN NATIONAL BANK
(*Unit: million schillings*)

Year	Amount
1925	2.104
1926	2.930
1927	3.250
1928	3.579
1929	3.058*
1930	3.636*

Data from *Statistisches Handbuch für die Republik Oesterreich*, Bundesamt für Statistik.

* The figures for 1929 and 1930 are not strictly comparable with the former ones because of the disappearance of the Boden Credit Anstalt, one of the largest banks.

Forcing up social benefits. Austria has always been the most progressive country in the world. There is compulsory illness insurance, accident insurance, unemployment insurance, unemployment benefits, old-age pensions. There is obligatory bonus for overtime, and a bonus for Sunday work. Children's labor is forbidden, women's night labor is forbidden. Safety and sanitation in plants are strictly controlled. Every worker is entitled to paid yearly vacations, also the first days of illness have to be paid for by the employer. Clerks are dismissed only after one to twelve months' notice and receive, moreover, a dismissal fee in the amount of one to twelve months' salary.

It is difficult to give exact figures of the "social burden" on industry. For individual firms, the increase in labor cost due to social benefits amounted to from 14 to 30 per cent of the pay roll. Figures showing the cost of three items of social benefits are given in Table 7. Austria paid for her noble spirit and liberal social-mindedness out of her capital.

Paying unearned dividends. That the corporations paid dividends although they had zero or

TABLE 7. — SOCIAL INSURANCE COSTS
(*Unit: million schillings*)

Year	Illness insurance	Unemployment insurance	Old-age insurance*
1924	64	...	...
1925	86	126	...
1926	89	153	...
1927	...	153	3
1928	106	141†	17
1929	127	158	24
1930	123	207	32

Data from *Wirtschaftsstatistisches Jahrbuch der Arbeiterkammer Wien.*

* Exclusive of old-age pensions of white-collar employees.

† Transfer of benefit-recipients to old-age insurance scheme.

negative profits had nothing to do with social-mindedness. It had to do with the banking situation. The banks had their portfolios filled up with shares of industrial corporations. In order to avoid having their assets fall they had to prop the stock prices. To cut dividends is to cut stock prices. Hence they paid dividends out of capital. The interest of hired business managers in maintaining their jobs and their salaries worked in the same direction.

Keeping industries going. Similar considerations induced banks and business managers to keep industries going, even if the loss from operation surpassed the loss from non-operation. There were, in addition, certain scruples which banks and government had about the social responsibility for the unemployment resulting from the shutdown of factories. They preferred to avoid political attacks and kept industries going, covering their losses out of capital.

Consumers' demand. We have discussed, so far, sufficient causes of a consumption of capital in Austria. It remains to be shown that the decline in capital was indeed paralleled by a maintenance or even rise of the level of consumption.

The increase in the consumption of certain commodities, as compared with the years of war

and inflation, was considerable. In comparison with 1925, we find in 1929 the consumption of flour increased by 14 per cent, sugar by 19 per cent, potatoes by 52 per cent, colonial goods (coffee, tea, spices, etc.) by 49 per cent, tobacco by 16 per cent. The indexes of total sales of consumers' goods, published by the Institut für Konjunkturforschung (base: average 1923–30) were, in 1929, for consumers' goods in general, 119; for food, 111; for clothes, 123; for shoes, 114; for furniture and household articles, 114.

Another indication might be seen in the status of the consumers' goods industries. It is indeed striking that breweries and sugar refineries succeeded relatively well in maintaining their capital. Protection played its part, but so also did subsidized consumption, in limiting the loss of capital in these industries to ten per cent.

Qualifications. We have to admit that the statistics of capital values of the corporations have their defects. But whatever allowances be made, the fact of an enormous loss remains; and — what is more significant — it was not a mere cyclical phenomenon. One of the major shortcomings of the method applied is that no measure of the physical status of capital equipment is available. The length of the time-lag of physical deterioration behind value destruction may be considerable, but there is no doubt that the equipment must be impaired after so long a time of decreasing values with rigid costs of reproduction.

It is, of course, not possible to separate the loss due to independent changes in demand from that due to the consumption of capital. The two factors are linked in two ways: (1) capital consumption brings with it secondary changes in demand which affect the value of existent equipment; (2) changes in demand of small order need not impair the value of equipment if the complementary factors react flexibly through lowering costs of production; *e.g.*, if a foreign market is lost by an increase in tariffs, and other, less advantageous, markets are to be sought, flexible wages would reduce the depreciation of the fixed equipment. "Sticky" wages (not to speak of increasing wages) involve, therefore, capital consumption. Hence it is futile to attempt to impute appropriate shares of the loss in capital values to tariff policy on the one hand and to wage policy on the other.

Similarly, no attempt has been made, or could be made, to estimate the parts which were played by each of the causes contributing to the capital consumption proper. Have the governments and municipalities, or have the unemployed, or has labor, or have the stock owners or their officers, eaten up capital, and how much has each of them eaten up? No answer is possible. If all together consume too much to leave the capital base intact, one cannot determine by how much the portion of each was excessive. If several factors raise costs of production, it is an idle question which factor raised them above prices. With lower taxes, wages might be tolerable, with lower wages, taxes might be tolerable; together, they might be high enough to prevent maintenance of capital.

CONCLUSION

Austria was successful in pushing through policies which are popular all over the world. Austria has most impressive records in five lines: she increased public expenditures, she increased wages, she increased social benefits, she increased bank credits, she increased consumption. After all these achievements she was on the verge of ruin.