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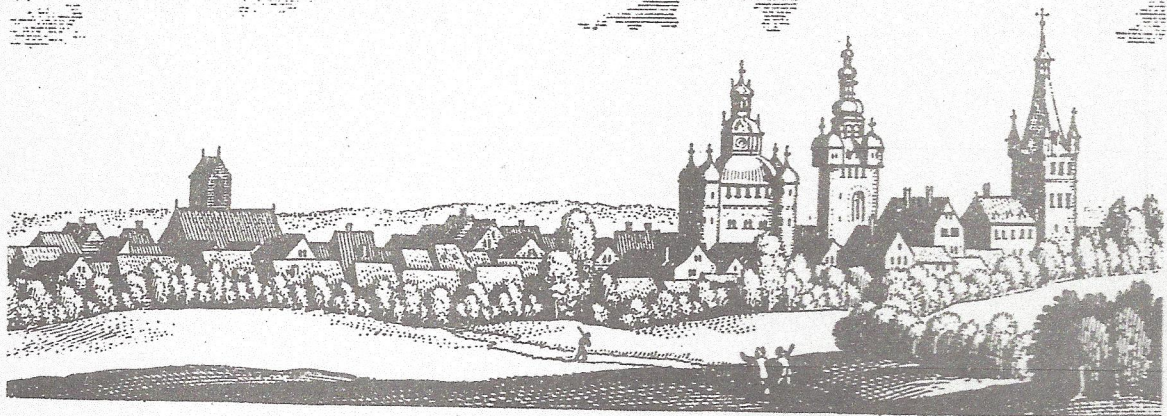## Arbeiten aus dem
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Reply to Mrs. Robinson, Morishima and Wolfstetter

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Reply to Mrs. Robinson, Morishima and Wolfstetter

Professor Morishima[1] and Mrs. Robinson[2] have written comments on my review[3] of Morishima's book on Marx[4]. Mr. Wolfstetter[5] has written a critique of an approach to the labour theory of value which was taken by Samuelson and myself.[6]

Their criticisms, although different in detail, are all in one way or another related to the central notion of Samuelson's and my approach. It is therefore useful to start the discussion from this point. This notion, which lies at the center of Samuelson's and my article as well as at the center of my Kyklos article and my review of Morishima's book is the complete duality relation between the consumption per head-rate of growth pay off curve on the one side and the real wage-rate of profit curve on the other side. The dual relation between the two variables, the rate of growth and the rate of profit, is, of course, already in the von Neumann-model. It had, in a way, been rediscovered in the Golden Rule of accumulation in the late fifties and early sixties. I wrote an article in 1963 in which I formulated the duality relation between the curves mentioned above.[7] This "fundamental duality relation" was rediscovered, improved and made accessible

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[1] M. Morishima, A Reply, this Journal ...

[2] J. Robinson, Comment on von Weizsäcker Morishima on Marx, This Journal

[3] C.C. von Weizsäcker Morishima on Marx, This Journal, December 1973

[4] M. Morishima, Marx's Economics, Cambridge 1973

[5] E. Wolfstetter, Surplus Labour, Synchronised Labour Costs and Marx's Theory of Value, This Journal, September 1973

[6] C.C. von Weizsäcker and P.A. Samuelson, A New Labor Theory of Value for Rational Planning Through Use of the Bourgeois Profit Rate, Proc. National Acad. of Sciences, USA, Vol. 68, No. 6, June 1971 and C.C. von Weizsäcker, Modern Capital Theory and the Concept of Exploitation, Kyklos, May 1973

[7] C.C. von Weizsäcker, Bemerkungen zu einem Symposium über Wachstumstheorie und Produktionsfunktionen, Kyklos 1963 (Vol.XVI), p. 454

to the English reading economist by Bruno.[8]

Samuelson and I proposed a labour theory of value, which clearly was not Marxian, and I regret that we called it a generalisation of Marx. Our labour values are the prices ruling in a steady state system, in which the rate of profit is equal to the rate of growth of the system, the money wage rate being unity. These values are, as Wolfstetter admits, the correct indicators for the steady state trade-off between different consumption goods and hence relevant for the choice-of-final output problem. They also prevail on the consumption maximising steady state path and thus are relevant for the choice of technique problem. Unless the system is stationary, the same is not true for the Marxian values. Up to this point Wolfstetter agrees with me, and I believe, also Morishima and Mrs. Robinson would agree. But now Wolfstetter says, the purpose of Marxian values is different, it is an instrument for the analysis of class relation in a capitalist society. For that purpose Marxian values have to be defined in the way they are defined: as the quantity of labour which is socially necessary for the production of the commodities. My point is that the Samuelson-Weizsäcker values are just that: they correspond to the socially necessary labour of the commodities and not the Marxian values. This has not become completely clear in Samuelson's and my earlier publications, and I am not sure whether Samuelson will agree with my argument which now follows.

There are two ways to compute Marxian values. Both are suggested by certain formulations in Marx's writings, but Wolfstetter and other present day Marxian economists seem to prefer one of them. The first way is to assume that the techniques of production in use have always been the same and then to compute the flow of labour inputs through time which eventually

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[8] M.Bruno , Fundamental Duality Relations in the Pure Theory of Capital and Growth, Review of Economic Studies, January 1969. In his article Bruno gives a too narrow interpretation of my 1963 theorem. Contrary to what he says, my theorem does not assume a one commodity economy.

produces the commodity in question. The labour content of
the commodity then is the sum of the components of this
flow of labour inputs.

Whatever the merits of the dated labour approach are
in a theory like the Austrian capital theory, it does
not seem to be reasonable a priori to add up the diffe-
rent components of the flow of labour inputs to get the
labour content of the final product. Since labour of
time t and labour of time t' are not interchangeable
in any given production process, this adding up is in
principle not better than adding up potatoes and apples.
Only an implicit assumption or axiom or definition makes
this a legitimate procedure. This assumption can be
called the conservation law of labour content and would
say: any quantity of labour expended today for the pro-
duction of a product available tomorrow is conserved
through time in this product and the products produced
by use of this product. But such an assumption is not
an assumption in the usual sense of the word. Contrary
to other assumptions made in economic model building
or theory there is no way of testing the assumption in
any given empirical economy, or any given specific
model of an economy. It is thus what I would like to
call a metaphysical postulate, or else it is a rather
arbitrary definition. Should Marxian analysis of capi-
talism rest on this metaphysical foundation ?

But modern Marxian capital theorists compute Marxian
values in a different way. We may follow Wolfstetter
here. The central concept is net product. The net pro-
duct vector is the difference between the gross product
vector and the vector of inputs necessary to produce
this gross product vector. The net product vector is
divided between workers, who buy it for consumptive pur-
poses from their wages,and capitalists, who use it for
consumption or accumulation. Under certain assumptions
on the production technology, total labour inputs of last
period are a linear, proportional and increasing function
of today's net product vector. The fixed coefficients of

this labour requirement vector, are, what Wolfstetter and Morishima consider to be the Marxian values of commodities. Here the quantity of labour related to one unit of net output of any given commodity is indeed homogeneous. It all accrues in one period and it appears that no "adding-potatoes and apples-axiom" is needed.

But the concept of net product itself is not without problems. Let us remember that the net product vector is the difference between todays gross output vector and yesterdays input vector. Thus it is subtracting potatoes from apples. Such a concept makes sense, if we have a corresponding axiom which says that the inputs are "contained" in the outputs which are their product. But this again is metaphysics. If we want to avoid metaphysics we have to find a way to identify yesterdays inputs with an equal vecotr of todays commodities, which can be subtracted from the gross production vector in order to obtain the net production vector. The only reasonable way to do so is to assume that todays input vector is equal to yesterdays input vector. This is the assumption of a stationary economy. This is the reason why I claim that the Marxian definition of values and socially necessary labour time implicitely correspond to a stationary reference economy. If the economy grows exponentially, the concept of net product is of no operational relevance, unless tax laws and custom and traditional modes of thinking make it so.

This is, of course, not only a criticism of Marxian habits of thought. The same habits of using an implicit or explicit stationary reference system prevail in large parts of orthodox economics. I take just one example which is related to the concept of net product. Net income has been defined as the quantity of consumption, which could be maintained indefinitely, if the present flow of incoming and outflowing money would continue indefinitely, or equivalently as the level of consumption which keeps net wealth constant. It is obvious that a stationary reference system is used. The usefulness of the con-

cept of income depends very much on the empirical validity
of certain hypotheses such as the Keynesian consumption
function. There is a priori no reason to prefer a definition
of income such as the prevailing one to a definition which
defines it as the level of consumption which is compatible
with a five percent growth of wealth. Indeed, in an era of
inflation people begin to think in such terms: income is
the level of consumption which is compatible with a rate of
growth of wealth in money terms equal to the rate of infla-
tion.

The only definition of the term socially necessary labour
time which is neither metaphysical in the above sense nor
restricted to a stationary economy is the one corresponding
to the Samuelson-Weizsäcker definition of labour values.
It takes into account the actual rate of growth of the system
and is operationally meaningful for the system in question,
as was already discussed.Unless we discuss a stationary eco-
nomy, the Marxian values are metaphysical constructs. Po-
litically they are important, no doubt, because people tend
to let their thinking be governed by stationary reference
systems. But this is not the matter to be discussed here.

These general remarks are perhaps also sufficient to answer
Wolfstetter's criticism. To avoid misunderstanding I add
that I share with him and with Marx the opinion that ortho-
dox economics has not been a sufficient tool of analysis of
the power relations in industrialised societies. The analysis
of the production sphere, as opposed to the circulation sphere,
has been completely inadequate. But it is my conviction that
the Marxian theory of value is of no use for such a research
programme. There is more in Marx than his theory of value
and it may be useful for this purpose.

I now turn to Morishima's reply. First an apology. I clearly
did misrepresent Morishima's opinion on aggregation. While I
recognised changes when reading the final version of his
chapter on aggregation, I was not sufficiently careful to

realise how fundamental they were. They amount to Morishima's acknowledgement that any set of production prices are just as good for aggregation purposes as are Marxian values. This means that the whole chapter becomes superfluous, since its purpose is to substantiate Morishima's claim: "Thus values are more solid and firmly founded aggregators than market wage prices; and this is the most important analytical rationale for the labour theory of value." (p.89) I was misled by this and similar sentences in the chapter as well as in the introduction to the book to believe that in Morishima's view Marxian values are specially good aggregation weights and that it is hence worthwhile to write and make the reader read a long and computationally quite exasperating chapter on Marxian values and aggregation. A more careful reading would have made me aware of this error, for which there is no excuse on my part. I ask the author to foregive me this careless treatment of his book. I have to add that I also misunderstood Morishima's claim: "It is therefore found that the blockwise (or department-wise) identity of the value composition of capital is the common condition under which we have no distortion in the aggregation of values, prices and quantities of outputs" (p.93). I thought this to mean: a sufficient aggregation condition is that the organic composition of capital is the same in those industries which are put into the same department. While this would have been a comparatively interesting proposition, it clearly was not proven by Morishima in his aggregation chapter. What he did mean by department-wise identity of the value composition of capital was something much more restrictive and in my view rather uninteresting. Thus Morishima's verbal statement and his mathematical proof are in agreement, contrary to what I said in my review. But his mathematical theorem is not interesting from the economic point of view. This misled me in my interpretation of Morishima's text.

Professor Morishima criticises me for not having understood the plan of his book. He says that he refrained from criticising Marx in the first 13 chapters of the book and it would be wrong to criticise him for the views expressed in these

chapters. I fully understood this, but what I was criticising
were the views of Marx as presented by Morishima. If I under-
stood Morishima correctly we should take Marx seriously as
a mathematical economist. But this implies that we have the
right and the obligation to evaluate his theories after
an economist of Morishima's competence has made them more
accessible to us. In chapter 14 Morishima gives his reasons
for rejecting the labour theory of value. My critique gives
some reasons why I reject Marx's theory of value even after
being made more consistent by Morishima. Professor Morishima
says that I should not have ignored chaper 14. I did not
discuss it in my review, just as many other parts of his
book were not discussed. Limitations of space forced me
to select a few topics. I did not write about chapter 14,
not because I agree with Morishima, but because this would
have meant a very elaborate discussion, which in addition
would have overlapped to a certain extent with other ar-
ticles of mine, in particular with my Kyklos-paper on ex-
ploitation. There I indicate how substitution and problems
of joint production can be made consistent with a labour
theory of value of the Samuelson-Weizsäcker type. The "von
Neumann-Revolution", as it is called by Morishima, certain-
ly was important for economic theory, but the von-Neumann-
model is too general a framework to discuss the labour theory
of value. We have more specific information about economic re-
ality. For instance empirical input-output analysis relies
on a certain property of near-non-jointness of production
at certain aggregation levels, which can also be used for
an empirically relevant labour theory of value. The existence
of a more general theoretical model does not automatically
make a more special theory with more powerful theorems ir-
relevant. The special theory remains valid if it happens to
be in approximate accordance with empirically established
facts.

Professor Morishima does not accept my criticism of his Fundamental Marxian Theorem, which says that exploitation is necessary for a positive rate of profit. His counterargument against my criticism, even if it were accepted, does leave the puzzle for the Marxists that under conditions of technical progress (i.e. normal conditions for a capitalist society) their value accounting scheme is no longer valid. But I do not accept Morishima's counterargument. Some of the reasons can be found in section IX of my Kyklos article on exploitation.

I said in my review that Marxian values are only employment multipliers, if the system is stationary. The employment multipliers of a system growing at the rate g are equal to the Samuelson-Weizsäcker labour values. The Marxian values are then hypothetical,unrealistic multipliers.Morishima now says that the Samuelson-Weizsäcker values are just as hypothetical multipliers. He then shows that one can be obtained from the other by a certain mathematical transformation. The latter is undoubtedly correct. But this does not make the values less hypothetical employment multipliers. And for an economy which grows at the rate g, the corresponding employment multipliers are not hypothetical. In addition, prices may be hypothetical or real employment multipliers, they certainly are real prices. The question was whether Marxian values are more than a hypothetical construct in an economy with a growth rate different from zero.

Professor Morishima and Mrs. Robinson both discuss my wheat-wine example which I developed in the Austrian tradition to criticise chapter 4 of Morishima's book.I first answer Morishima's comments. I fully understood Morishima's purpose to show the close neighborhood of Marx's and Walras' approach to the problem of economic interdependence. He constructs in chapter 4 a non-capitalist but Walrasian market economy with simple reproduction. For convenience, as he says now, he assumes that workers do not save. His results would also apply, if workers did save or dissave, i.e. if workers wanted to shift their consumption through

time at the prevailing prices, which are proportional to the labour values. But then his model is no longer a Walrasian general equilibrium model. For Morishima would have to check what the mechanism is, which makes the intertemporal decisions of the households compatible with the stocks of means of production necessary to produce the commodities demanded by the households. He would have to specify, what the instruments are, which allow the households to make intertemporal consumption decisions. My wheat and wine story was an attempt to do just that. I changed the institutional setup, because I could not find which instruments were available to consumers in Morishima's model to make intertemporal consumption decisions. On the other hand, I was careful to avoid capitalist institutions like lending and borrowing money and wage labour. Of course, if society dictates to consumers what their intertemporal decisions have to be - by not providing instruments for the acceleration or postponement of consumption - Morishima's conclusion may be correct. But this is begging the question and I would hesitate to call such a model Walrasian. I maintain my proposition: if consumers have the possibility to accelerate consumption and if they have positive time preference, a stationary general equilibrium system is characterized by commodity prices which indicate a positive implicit real rate of interest. Exploitation of a class, which does not own means of prodution, is not necessary in such an economy. Walras and Marx are further apart than Morishima wants to suggest.

Before I turn to Mrs. Robinson's remarks I must make clear that my whole analysis is comparative static. I made a mistake in calling the two states which I consider two Ages (the Golden Age and the Silver Age) following one another, thereby perhaps suggesting that I wanted to discuss the transition in time from one to the other. This is unfortunate. I did not want to discuss the dynamics. I wanted to show that a stationary Walras equilibrium is inconsistent with labour value prices, if time preference prevails. I therefore shall not discuss the remarks of Professor Morishima and Mrs. Robinson on the dynamics of the system. This does not mean that I agree with everything they say in this respect.

Mrs. Robinson brings into the picture an unnecessary complication by assuming that producers of wheat cannot shift to the production of wine or vice versa. I made the assumption that everybody is equally skillful in producing wheat and in producing wine. Mrs. Robinson may argue that this is an unrealistic assumption. She is right, if one takes this assumption literally. She may not be right if we allow time for the change in the relative quantities of wheat producers and wine producers. And time we can allow, as we are not concerned with the dynamics. If the skill differences involved come from training and experience and not from biological factors, at most a generation's time is necessary to adapt the supply of wheat growers and wine growers to a new equilibrium. In addition, I do not accept Mrs. Robinson's and Marx's conception that in precapitalist economies skill played a much more important role than in a modern capitalist economy. This is a biased view of economic history. Hence I consider it legitimate to make the abstraction from skill differences for my model, if Marx does the same for his model of capitalism. Morishima takes the same course in the chapter which I criticize with my example.

Mrs. Robinson then discusses the question whether there is a rate of interest in a stationary state under conditions of impatience. As the last paragraph of her contribution indicates, she is prepared to give a positive answer, at least implicitly : "If there is no monetary system in the economy, borrowing could take the form of paying for a quantity of wine ready to drink with some quantity of inmature wine. The premium involved, which might be either positive or negative, would depend upon the balance of supply and demand for future against present purchasing power". This is very much in the spirit of what I wanted to show. I went a little further and showed that the premium for mature wine was definitely positive in a stationary equilibrium, if time preference prevailed.

But this premium for mature wine is equivalent to a positive
implicit rate of interest. Mrs. Robinson continues to say: "If
all were very impatient, no one would be willing to hold
barely drinkable wine to maturity and there could be no
borrowers because there would be no lenders." I disagree. If
everybody is very impatient then the premium for mature wine
is very high, i.e. the rate of interest is very high, but an
equilibrium is still possible.

For clarity and simplicity I made two assumptions. Wine cannot
be drunk until it is five years old and wine no longer gets bet-
ter if it becomes older than five years. Thus within the two
industries a choice of technique problem does not arise. I there-
fore don't have to consider the social rate of return to capi-
tal in this case. I don't muddle up anything in this respect.
Resources are allocated differently in the Golden Age and in
the Silver Age. In the latter more wheat is produced (some of
the wine growers of the Golden Age become wheat growers but they
still inherit and bequest five vintages of wine), because con-
sumer demand for wheat is relatively higher due to its lower
market price. But this is not essential. I could have assumed
that the proportion in which consumers demand wheat and wine
is fixed and independent of market prices. Then the Golden Age
and the Silver Age sees the same allocation of resources. But
there still would be an implicit rate of interest (it even
would be higher than in the case I discussed). It would be
such as to induce wine growers to hold the same stocks as are
held in the Golden Age. In other words: wine growers turn out
to do the same thing in both Ages. But given their freedom of
intertemporal choice, they need different incentives to do it,
because their preferences differ in the two Ages. This is the
very essence of general equilibrium analysis. The individual
has a freedom to behave differently from the way he actually
behaves, which may not be true to the same extent for society.
But the price mechanism induces individuals to behave in such

a way that society at large chooses a feasible course. In our case: each individual wine grower is free to accelerate his consumption or to postpone it, but the prices on the market are such that the individual decision on the time pattern of consumption and stocks of not yet drinkable wine are in accordance with the stocks required to produce the steady flow of mature wine demanded by the consumers. It should also be noted that the price ratio of mature wine and wheat is higher in the Silver Age than in the Golden Age. Wine growers get a larger share of total wheat and wine consumption, if time preference prevails. Hence I disagree with Mrs. Robinson when she writes: "... if wine cannot be drunk at all until it is five years old, there is no choice and no scope for impatience. " And I think Walras would have disagreed too.