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Pareto-Efficiency, Hayek's Marvel, and the Invisible Executor

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Abstract

This non-technical contribution to the RWER-Blog deals with the interrelations of market clearing, efficient information processing through the price system, and distribution. The point of entry is a transparent example of Pareto-efficiency taken from the popular book *How Markets Fail*.

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That's good for you and the economy as a whole, modern economists say:

For example, let *A* be a situation in which you earn \$ 500 a week and I earn \$ 1,000 a week and let *B* be a situation in which you earn \$ 750 a week and I earn 1,000. Then, according to Pareto, *B* is superior to *A*, because your pay is higher and mine is the same. . . . Modern economists refer to a shift from *A* to *B* . . . as a "Pareto improvement," and they define an economic outcome in which all such moves have been exhausted as "Pareto-efficient." (Cassidy, 2010, p. 54)

This, of course, is only the first half of the story. What we look at is alone the income situation. To come full circle, expenditures must also be taken into account. So let us assume that our elementary economy consists of one firm, and you and me as workers. Together we produce 1,000 units of the consumption good. We spend our income fully, hence consumption expenditure is always equal to income. Our budgets are balanced.

Thus, in case *A* total consumption expenditures are \$ 1,500. With an output of 1,000 units this gives a market clearing price of \$ 1.50. You buy 333.3 units and I buy 666.7. We consume all these units in the period under consideration. Hence my real consumption is initially the double of yours. Note in passing that the profit of the firm we work for is exactly zero. The firm invariably gets back from the consumption good market what it pays in wages. The whole configuration is reproducible for an indefinite time.

Now your income situation improves and mine remains unaltered. In case *B* the consumption expenditures are \$ 1,750. Accordingly, the market clearing price is \$ 1.75. You buy now 428.6 units (compared to 333.3) and I buy 571.4 (compared to 666.7). In real terms the situation is no longer Pareto-efficient. Clearly, you are better off and I am worse off. The situation would still be Pareto-efficient if the price had not changed. Under the condition of budget balancing and market clearing, though, the price must rise. Note in passing that the firm's profit is still zero. The firm is therefore indifferent between *A* and *B*.

To define Pareto-efficiency as in the introductory quote is a specimen of superficial economic analysis. The methodological point is that Cassidy's example is a partial model and what is needed is a total model. From a partial model no general conclusions can be drawn. Ultimately, partial analysis is a shell game.

In the total model the price must increase in order to clear the market. This is the first of the diverse functions of the price mechanism. According to Hayek, the price system is a kind of telecommunications system which makes that the decentralized markets function properly. Not only this, it directs workers and other resources to their most productive uses. In other words: it realizes overall Pareto-efficiency.

I have deliberately used the word "marvel" to shock the reader out of the complacency with which we often take the working of this mechanism

for granted. I am convinced that if it were the result of deliberate human design, and if the people guided by the price changes understood that their decisions have significance far beyond their immediate aim, this mechanism would have been acclaimed as one of the greatest triumphs of the human mind. (Hayek, 1945, p. 527)

With this, Hayek established the metaphor of the market as ‘superior information processor’ (Mirowski, 2013, p. 78 et seq.) that ultimately guarantees the efficiency of the whole economy and the optimal allocation of resources. This sounds good, nay, irresistibly good in the age of computers, but as Keynes remarked back then with an eye to intolerable unemployment:

We get on very well in private life. But what rubbish his theory is. (Keynes, quoted in Cassidy, 2010, p. 40)

Hayek, to be sure, tells at best part of the story. The major function of the price mechanism is not information processing but redistribution. The higher market clearing price in our example does not only signal that a higher nominal demand interacts with an unchanged real supply but it actually redistributes the output. When all is said and done I have 95 units lost and you have them won. This 28 percent reduction of my real income is what shocks me out of complacency about the working of the price system. The real marvel is that it is not you personally who takes something away from me. It is the anonymous market price. You, too, pay the higher price and, in a twisted logic, suffer with me.

However, if the productivity increases in the period under consideration then the redistribution can even take place at a constant market clearing price. In this case my real income remains constant but you cash in on the productivity effect. The market price would not signal anything and the whole action would count as a Pareto-improvement. Note again that profit does not change at all, it is still zero.

The distinctive feature of the elementary economy is that, as a matter of principle, there is no hindrance to repeat the shift from *A* to *B* as often as anybody likes. In other words, you can push me over the economic cliff with active support from the price system, or I can push you. All this is Pareto-efficient in nominal terms. Needless to emphasize that the elementary economy does not cover profit, interest, investment, etc. because all this would not affect the key point of the analysis.

In sum, our exemplary price system clears the market but does not help to bring about Pareto-efficiency in real terms. Just the contrary, it helps to bring about a redistribution of the real product. The remarkable thing about the price system is not that it is a superhuman information processor but that it is an invisible executor that, in a sense, serves social peace. Imagine for a moment that the tax collector takes 28 percent of your real income away and gives it to me, or vice versa. Such madness would be beyond all bearing. The price system can perform this feat Pareto-efficiently.

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