

Problems of modern reconstructions of David Hume's international adjustment mechanism

Tamás Dusek

Tamás Dusek
Professor
Széchenyi István University
Győr
Hungary
9026, Egyetem tér 1.
dusekt@sze.hu

Abstract

David Hume's thought experiment on the international flow of money is an important part of the history of economic thought and a regular reference for current theoretical economic and economic policy discourse too. Many proponents of monetarism regard Hume as the greatest and foremost classical predecessor. This paper examines whether the theoretical reconstructions and references in economic theory on Hume's thought experiment can be considered valid and correct. Hume did not describe the actual self-regulating mechanism of the international balance of payments, but he presented a thought experiment that he insisted could not occur in reality, because the very mechanisms he explained prevented their emergence. Later interpreters of Hume, on the other hand, have often misinterpreted Hume's original ideas, confusing the thought experiment with the actual situation, or criticising it for its unrealistic starting points, or from other contemporary methodological perspectives that Hume could not have examined. I deal in more detail with Samuelson's criticism of Hume, in which almost all the typical flaws of mathematical reconstruction and presentist historiography can be found, and with the problematic claim, that Hume would not have recognized the law of one price.

keywords: Hume, thought experiment, Samuelson

Introduction

The contribution of the Scottish philosopher David Hume (1711-1776) to economic theory consists mainly of essays published in his *Political Discourses* in 1752. A writing entitled "Of the Balance of Trade" appeared in this volume. Here Hume describes the relationship between international money flows, the money supply and the price level. In short, if the money supply

in a country increases, the price level increases by the same amount, causing the extra money to flow out of the country and the price level to return to its original level. While he did not address the timing and micro-level effects of these processes, he did use this description to demonstrate the long-term failure of mercantilist economic policies that sought to hoard money within a country and restrict foreign trade.

This work has since been a constant reference for researchers in monetary theory and policy and for those making more practical economic policy recommendations, even among the proponents of anti-historical views and denigrators of past achievements. Krugman, Obstfeld and Melitz write in their textbook (International Trade) that “historians of economic thought often describe the essay “Of the Balance of Trade” by the Scottish philosopher David Hume as the first real exposition of an economic model. Hume published his essay in 1758” (Krugman et al., 2018, p. 23) The date of publication is wrong (it was actually published in 1752), and it is not clear who the historians involved in this claim are.

In this short paper, I would simply like to show that a significant and influential body of work that invokes Hume distorts Hume’s original ideas by unfair, unjust and inadequate criticisms. As a further limitation, I will focus on the evaluation of one the most influential author, Paul Samuelson. However, this limitation is not significant, because Samuelson has influenced many other authors through his institutional positions and authority.

Hume’s place in the canon of the history of economic thought

The present paper draws partly on secondary literature (a fragment of them) and partly on Hume’s original essay. A vast secondary and tertiary literature on David Hume’s economic works was already developing in Hume’s lifetime. The Political Discourses with essays on economics was popular, being republished 17 times in 5 languages until 1767 (6 in English, 6 in French, 2 in German, 2 in Italian, 1 in Swedish) (Charles, 2008). The vast majority of books on the history of economic thought discuss his contribution in a few pages, typically as an intermediate actor between mercantilism and classical economics, and as a precursor of Adam Smith, highlighting his personal friendship with Smith and his influence on Smith’s worldview. Table 1 shows the coverage (in terms of pages, not depth) of some books on Hume and Smith. This demonstrates that Smith is a much more important author, but Hume is still an influential figure. His assessments are varied, with the most frequent being positive and highlighting his merits. The sharpest criticism is from Rothbard (Rothbard, 1995), while Schumpeter (in his History of Economic Analysis, which is not included in the table because Hume appears in this book in several fragments) is less critical, insofar as Schumpeter does not consider his ideas on

monetary theory and international trade to be original, since they were already expressed by other authors.

Table 1 Number of pages on Hume and Adam Smith in some general works on the history of economic thought

Author	Title	Hume	Adam Smith
Negishi	History of Economic Theory	7	34
Rothbard	An Austrian Perspective on the History of Economic Thought	5	40
Vaggi and Groenewegen	A Concise History of Economic Thought	5	14
Brue and Grant	The Evolution of Economic Thought	4	24
Sandmo	Economics Evolving. A History of Economic Thought	2	28
Screpanti and Zamagni	An Outline of the History of Economic Thought	2	17
Colander and Landreth	History of Economic Thought	1	33
Ekelund and Hebert	A History of Economic Theory and Method	1	29
Rima	Development of Economic Analysis	1	29
Haney	History of Economic Thought	1	26
Roncaglia	The Wealth of Ideas. A History of Economic Thought	1	20
Kurz	Economic Thought: A Brief History	1	6
Hunt and Lautzenheiser	History of Economic Thought	0	25
Kautz	A nemzetgazdaságtan és irodalmának történeti fejlődése	5	48
Farkas	A közgazdasági gondolkodás rövid története	2	10

As regards the literature dealing specifically with Hume, it is very abundant, ranging from monographs (such as Henderson, 2010) and collections of papers (Wennerlind – Schabas, 2008) to essays and there is even a journal (Hume Studies, established in 1975) dedicated to Hume's work. Hume has received particular attention in the discussion of monetary theory and international trade theory, often regarded as one of the founding fathers of these fields. Such claims are quite common: "the monetary approach goes back to David Hume's price-specie-flow mechanism" (Johnson, 1972, p. 13) or "balance-of-payment theory initiated by David Hume's price-specie-flow mechanism" (Johnson, 1975, p. 220). However, according to Fausten's analysis, the analytical framework of Hume and the modern authors was very different (Fausten 1979).

Hume's essay in brief

The main message of the essay “Of the balance of trade” is the following: if the quantity of money in a country increases, the price level increases by the same amount, with the result that the extra money flows out of the country and the price level returns to its original level; therefore, money cannot be (and should not be) hoarded. As a consequence, trade-restrictive (and other restrictive) economic policy proposals of mercantilists do not produce the desired effect. This is the main theoretical statement of the essay – and this can be adequately summarized in almost one sentence. With Hume’s own words: ”Suppose four-fifths of all the money in Britain to be annihilated in one night (...) In how little time, therefore, must this bring back the money which we had lost, and raise us to the level of all the neighbouring nations? Where, after we have arrived, we immediately lose the advantage of the cheapness of labour and commodities; and the further flowing in of money is stopped by our fulness and repletion” (Hume, 1994b, p. 138).

There are some supplementary results to the main message. Hume is a very strong supporter of ultra-hard money policy, the 100 percent specie-reserve banking. He attacks on the unproductive and inflationary nature of the very existence of fractional-reserve banking: “I scarcely know any method of sinking money below its level but those institutions of banks, funds, and paper-credit which are so much practised in this kingdom. These render paper equivalent to money, circulate it through the whole state, make it supply the place of gold and silver, raise proportionally the price of labour and commodities, and by that means either banish a great part of those precious metals, or prevent their further increase. What can be more short-sighted than our reasonings on this head?” (Hume, 1994b, p. 142) In addition to monetary analysis, Hume articulates the fallacy of composition very clearly: “We fancy, because an individual would be much richer were his stock of money doubled, that the same good effect would follow were the money of every one increased, not considering that this would raise as much the price of every commodity, and reduce every man in time to the same condition as before” (Hume, 1994b, p. 142).

Hume’s writing method and style is very different from that of today. The essay is unsystematic, consists of loosely connected blocks. There is about one page of logical theoretical statements, the rest is historical illustration, anecdotal argumentation and commentaries within a broad geographical (England, France, Poland and other European territories, Asia, America) and historical (from antiquity to the present) framework. Such examples: “It is well known to the learned, that the ancient laws of Athens rendered the

exportation of figs criminal, that being supposed a species of fruit so excellent in Attica that the Athenians esteemed it too delicious for the palate of any foreigner” (Hume, 1994b, p. 136). “Nothing can be more entertaining on this head than Dr. Swift, an author so quick in discerning the mistakes and absurdities of others. He says,…” (Hume, 1994b, p. 137). “What pity Lycurgus did not think of paper-credit when he wanted to banish gold and silver from Sparta!” (Hume, 1994b, p. 143). There are references for the sources of this historical facts, but not everywhere where they should be today.

Paul Samuelson's reconstruction and evaluation

Paul Samuelson, one of the most influential economists of the 20th century, has dealt with the mathematical reconstruction of the history of theory in more than 70 papers, with a penchant for criticizing classical economists for their alleged inconsistencies and methodological weaknesses (Medema–Waterman, 2010). In the introductory part of his paper, “A corrected version of Hume’s equilibrating mechanism for international trade”, which was firstly published in 1980, he assesses Hume’s analysis, writing rather bluntly and patronizingly, as wrong and incomplete. He would even forgive the incompleteness, because “that would be a forgivable blemish in an early masterpiece” (Samuelson, 2014, p. 39). However, Hume’s followers, according to Samuelson, did not correct the inconsistencies, neither the classics (Smith, Ricardo, Mill) nor the moderns (Haberler, Viner, Ohlin). Hume’s inadequate analysis, according to Samuelson, has so far satisfied the economists who followed them.

In the middle section of the paper (“Where Davie nodded”), we will learn what Samuelson considers to have been Hume’s sins: his failure to take into account the law of one price for freely tradable products in international trade, the Marshall-Lerner conditions for different price elasticities, and the distinction between tradable and non-tradable products. Middle of the paper deals with mathematical formulation of a modified theory. Hume, of course, lacks mathematics. Samuelson uses elementary mathematics, which is completely superfluous to the argument: “Now to put Hume in crudest equation form. Let P stand for gold price(s) at home, P^* for price(s) abroad; M^* stands for their (gold) money supply, M for our gold supply; Q and Q^* for the total outputs at home and abroad” (Samuelson, 2014, p. 41). Samuelson maybe believes that these notations and the following formulae express more than the simple words of Hume and, furthermore, describe the situation more precisely. It is an unsupported claim, mathematical expression can only give the illusion of precision for concepts where their measurability is not assured. Samuelson’s reconstruction is not equivalent with Hume’s original model, the “Corrected Version of Hume” is not Hume, but it is Samuelson.

To understand a theory, it is necessary to examine the problem that the theory is intended to solve, because from this can be deduced how acceptable, complete, partial, incomplete, flawed the solution is. The truth of a statement can be decided within a system of statements. Hume's aim was to describe the interrelationships between changes in the money supply, the balance of trade and international money flows and thus refute the effectiveness of the mercantilists' proposals to restrict foreign trade. He did this well, his description is not flawed as Samuelson claimed. Indeed it is incomplete, but on the one hand all descriptions are incomplete, and on the other hand what Samuelson finds to be lacking is unjustified. And although Hume's description is incomplete, it is more abundant and accurate than the usual reconstructions. The richness and greater precision is shown, on the one hand, by his description of the modifying effect of money substitutes compared with the original case. On the other hand, in contrast to neoclassical formalism, countries were not treated as dimensionless points, but for what they are: units with spatial extent, within which the processes shown to be applicable to the relationships between countries are equally valid.

When Samuelson criticises Hume's law of one price as an analytical flaw or shortcoming, he is criticising him for the absence of a 20th century absurd and factually incorrect theorem that existed only in the fantasy world of neoclassical formal economics. Two absurd assumptions would be needed to adopt the "law", which Hume of course did not make use of, namely the treatment of countries as points and the non-existence of a transport cost. These two assumptions introduce constraints into any spatial analysis that lead to seriously distorted results, such as the fallacy of the law of one price, which equates with the same price level of transportable goods across countries. This is the form that Samuelson missed. In a spatial economy (and the real world is such an economy), the version of the law of one price that holds is that the spatial difference in the price of transportable goods should not exceed their cost of transport. And the aggregate index of transportable products, the price level for different spatial units or countries, may differ.

Samuelson's other objection is the lack of distinction between transportable and non-transportable products. This is also problematic in that in reality there is no sharp dividing line between these two categories of products and that an entire sector, transport itself, which cannot be localised at a distinct geographical point, is outside the scope of the categorisation.

Samuelson also made a further fundamental error in his interpretation of Hume, which invalidates his reconstruction. Namely, he mistakes Hume's thought experiment for a model-like description of actual processes (Cesarano, 1998; Schabas, 2008a). He cites a study from 1903 that argues that in our modern times, because of cables and quick transport, the specie-

flow corrective mechanisms no longer work, and that prices for the same product equalise essentially instantaneously. Thus, the quotation continues, it is inconceivable that prices in Britain would fall by the four-fifths required by Hume to deal with the shortage of money (Samuelson, 2014, p. 43). Except that it is quite clear from the original text that Hume was not describing an actual self-regulating mechanism of the international balance of payments, but was presenting a thought experiment that he insisted could not occur in reality because the very mechanisms he was illuminating with it prevented their formation. So, we can imagine, as Hume did, that the money supply of a country increases fivefold overnight, or decreases fivefold by some miracle, and then we can trace the consequence of this on price levels and trade balances. That is what Hume did, based on the quantity theory of money, with the method of comparative statics, assuming a once-and-for all change in the amount of money rather than a continuous temporal process, certainly by omitting some factors, with micro-factors that make the description of the process more precise, but nevertheless does not threaten the validity of his line of thought. In Samuelson's defence, many others confuse the thought experiment with either an actually possible situation or a model to explain reality. Thus, because of their flawed starting point, Hume is criticised (e. g. Negishi, 1989; Negishi, 2001) for not taking into account that the price of goods traded internationally cannot differ by more than their transport costs.

Authors criticising Samuelson in defence of Hume

Criticising Samuelson, several authors have defended Hume. Margaret Schabas describes Samuelson as an unjust, harsh, unfair negative critic (Schabas, 2008b, p. 141). Cesarano, quoting Hume, argues that Hume did in fact perceive the law of one price: "And any man who travels over Europe at this day, may see, by the prices of commodities, that money, in spite of the absurd jealousy of princes and states, has brought itself nearly to a level; and that the difference between one kingdom and another is not greater in this respect, than it is often between different provinces of the same kingdom" (Hume, 1994b, pp. 140-141). Four objections can certainly be raised against Cesarano's claim that this is a perception of the law of one price. On the one hand, an empirical observation is not equivalent to a law deductively deduced from basic propositions and initial assumptions. Secondly, Hume did not travel in Europe, he only visited France outside England, and in fact he would have observed significant real price differences. The importance and high cost of transport was, in any case, repeatedly mentioned by Hume. Thirdly, there is no need to use the law of one price because, as I have mentioned, it does not apply in this form in the real world due to the transport cost. Fourthly, a somewhat contradictory quotation from Hume can be found: "There is more difference between

the prices of all provisions in Paris and Languedoc than between those in London and Yorkshire” (Hume, 1994a, p. 169).

As far as the shortcomings of the analysis are concerned, they can only really be blamed in one case: when the issue is relevant to explaining the problem under investigation. Otherwise, no theory can ever be expected to provide a complete explanation: there are always many assumptions which are explained in great detail by other theories, but which are treated as external to the specific problem. Such is the case with the law of one price, whether it was not addressed by Hume (as Samuelson claims) or was addressed in some way (as dozens of other interpreters claim), such as the question of the effect of changes in the money supply on relative prices, employment, income distribution, public finances and many other areas. These can all be examined and indeed could be added to the thought experiment, and should be examined if the purpose of the explanation requires it, but otherwise ignoring them is not a “mistake” or a shortcoming. When they are explicitly mentioned, they are done so as negligible assumptions that do not affect the outcome of the analysis. In addition, there may be many other detailed issues that are simply unnecessary to specify because they do not limit the analysis of the issue at hand.

A further unjustified expectation may be laid to Samuelson’s charge: his criticism suggests that it is possible, when first formulating a topic, to state all its components with the utmost perfection. Moreover, if the subject to be discussed is poorly identified, it is even easier to claim the shortcomings of the analysis.

Summary

Samuelson’s paper on Hume, despite Samuelson’s intention, serves as an excellent illustration of the absurdities of mathematical reconstruction. Interestingly, many proponents of monetarism mostly regard him as the greatest and foremost classical (or preclassical) predecessor, despite the fact that Hume did not describe a continuous process over time. One of Samuelson’s regular debating partners, Milton Friedman, praising Hume, described twentieth-century monetary theory as a footnote to Hume, while Keynes, who thought in macro-aggregates, regarded him as the forerunner of equilibrium analysis. This just goes to show that each of several opposing views can be one-sided or wrong at the same time. Indeed, Friedman, Keynes and Hume had in common the tendency to think in simple and deceptive aggregates, to ignore the impact of changes in the money supply on micro processes and to fail to describe the processes between two equilibrium states. More deserving of praise would have been the

sophisticated process analysis of Cantillon (Rothbard, 1995), who also addressed these issues too.

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