Contents lists available at ScienceDirect

European Economic Review

journal homepage: www.elsevier.com/locate/euroecorev

Firm heterogeneity, comparative advantage and the transfer problem

Federico Trionfetti[1]

Aix-Marseille Univ, CNRS, EHESS, Centrale Marseille, AMSE, France

ARTICLE INFO

ABSTRACT

This paper studies the transfer problem in a model featuring comparative advantage, monopolistic competition, trade costs, and firm heterogeneity in factor intensity. The results are very different from those of the previous literature. First, a transfer creates a secondary burden in situations where the neoclassical version of the Heckscher–Ohlin model would not. Second, a transfer affects wage inequality. Third, a transfer is not neutral to world welfare. Fourth, floating exchange rates do not substitute for deflation. Fifth, a simulation exercise shows that the quantitative effects of trade imbalances are comparable in magnitude to those arising from major trade agreements.

1. Introduction

"After the First World War economists discussed the effects of a unilateral transfer - such as reparations - on the terms of trade. And in the 1950s, as the end of the Marshall Plan comes into sight, economists must once again consider an identical analytic problem - the possible effects of a cessation of unrequited imports on the terms of trade".[2] In the XXI century we are confronted with analytically similar problems arising from transfers of various sorts; such as those arising from trade imbalances, from the intra-European transfers, from foreign aid, and remittances. Some of these transfers arise from governmental decisions (e.g., intra European Union transfers and foreign aid), some are the results of private decisions (remittances), some are the results of inter-temporal optimisation (e.g., trade imbalances) but all can be studied from the point of view of the impact they have on the economies concerned. A transfer has two possible effects. One is the primary effect, or primary burden, which consists in the resources to be transferred. The other is the secondary effect, or secondary burden, which consists in the general equilibrium repercussions of the transfer on welfare.[3] The existence of a primary burden is, of course, incontrovertible while the existence and magnitude of the secondary burden has been the object of contention in the entire literature on the Transfer Problem. As is well known, the controversy over the secondary burden has been sparked off by Keynes (1929) who found remarkable commentators in Ohlin (1929) and Rueff (1929). The literature

[2] Samuelson (1952, p. 278).

[3] Keynes (1929) uses the term 'Budgetary Problem' to refer to the primary effect and 'Transfer Problem' to refer to the secondary effect. Samuelson (1952) uses the terms 'primary burden' and 'secondary burden'.

flourished with contributions by Pigou (1932), and Metzler (1942, 1951). This literature examined the possible repercussions of a transfer on the donor terms of trade. Some argued that the donor terms of trade would deteriorate thus giving rise to a secondary burden for the donor (this view became known as the orthodox view), some argued that the donor terms of trade might actually improve thus giving rise to a secondary benefit for the donor (the so called anti-orthodox view), and some argued that the transfer would be neutral on the terms of trade. Samuelson (1952, 1954) marked a milestone in the literature when he came to clarify the conditions under which the orthodox or anti-orthodox view is right. Later works took into account additional aspects such as the link between stability and the terms of trade effects of transfers (Johnson, 1956; Mundell, 1960; Galor and Polemarchakis, 1987), non-traded goods (McDougall, 1965; Dornbusch et al., 1977a), multiple countries (Dixit, 1983; Yano 1983), many goods (Balasko 1978), non-identical preference and non-traded goods (Jones, 1970, 1975), investment-induced terms of trade effects (Djajić et al., 1999). Though the model assumptions became richer the attention remained concentrated on the terms of trade effects of transfers. The focus on the terms of trade was natural and well placed since the conceptual framework used by all this literature was the one we now call the "neoclassical model" of trade. In this model, the only possible way a transfer creates a secondary burden is via an adverse change in the terms of trade. Samuelson makes this point very clearly in his two famous articles (1952, 1954).

I re-examine the Transfer Problem in the light of models featuring factor proportions, monopolistic competition and heterogeneity in firm factor intensity. Using this model I study the effect of a transfer on productivity, income distribution and factor allocation. Interestingly, the importance of such re-examination had not escaped Samuelson's crisp analysis when he wrote: "Only if one brings in Chamberlinian phenomena of monopolistic competition do substantive effects arise, ..." Samuelson (1954, p. 288). This line of research was not pursued by Samuelson and remained almost entirely unexplored even after the appearance and vast utilisation of monopolistic competition models in international trade theory.

Only a few papers took this research direction. Brakman and van Marrewijk (1995) were the first to use a model of monopolistic competition to study the effect of transfers in the form of aid to developing countries. The key elements in their model are non-identical preferences between countries and home biased expenditure. Their model is a single-factor, homogeneous firms, free trade model not suitable to study the matters I address in this paper. Corsetti et al. (2013) use a model of monopolistic competition, heterogeneous firms, and a partition of all firms in exporters and non-exporters. This partition allows them to distinguish between the intensive and extensive margin of trade as channels through which a transfer may affect welfare. They find that the presence of the extensive margin attenuates the repercussions of the transfer on the real exchange rate and on the terms of trade. This is because part of the demand changes induced by the transfer are absorbed by the extensive margin. Their approach differs from mine especially because they focus on the terms of trade while I study the effects of transfers also on inequality, productivity, relative price of goods, and the exchange rate. As a result of different research focuses, their model differs from mine in that it assumes no comparative advantage, no selection into entry, unbiased heterogeneity, and a partition between exporting and non-exporting firms that I dispose of since it is not necessary for my purposes. Epifani and Gancia (2017) use a multi-country, two-sector, one-factor model of monopolistic competition where, like in Davis (1998), the homogeneous good is non traded and where they insert intermediate inputs in the same way as in Krugman and Venables (1995). In their model a trade surplus may bring about an appreciation of the exchange rate, a terms-of-trade improvement and a welfare increase. The key elements of their model are intermediate inputs and trade cost in the homogeneous good. Their model differs from mine especially because it does not include comparative advantage and heterogeneous firms; as such it is unsuitable to study the issues related to productivity and the skill premium that I address in my study. Picard and Worrall (2015) also study the effects of transfers. They study whether the possibility of transfers between countries make the case for a currency area stronger or weaker. Their numerical simulations show that a currency area is optimal under reasonable parametrisation of the model. Their work, like mine, considers transfers and alternative exchange rate regimes but differs from mine in the research objective and in the model structure. Their single-factor, monopolistic competition model suffices to their purposes but does not take on board many elements I instead have to consider, such as factor proportions and firm heterogeneity. A few other papers are very close to mine in terms of the model but are quite different in terms of the research objective. Bernard et al. (2007), Burstein and Vogel (2016); Costinot and Vogel (2010) and Crozet and Trionfetti (2013) all use heterogeneous firms and comparative advantage. However, differently from the present paper, the first paper does not allow for heterogeneity in factor intensity at firm level, the second does not allow for entry, the third and fourth are more closely related but they do not contain flexible exchange rates. Most of all, the difference with these four papers is in the research objective since none of them studies the the transfer problem. The empirical literature counts only three papers. Devereux and Smith (2007) provide an empirical study on the effects of Franco–Prussian reparation payments. Lane and Milesi-Ferretti (2004) provide evidence that countries with net external liabilities tend to have depreciated real exchange rates. Crinò and Epifani (2014) augment the (Dornbusch et al., 1977b) model with a non-traded good and find, consistently with such model, that a trade surplus (a transfer) is associated with lower skill-intensity of donor exports when the donor is skill-abundant and a higher skill-intensity of donor exports when the donor is skill-scarce.[4]

The results of my study contrast sharply with those of the previous literature on the transfer problem. I find that a transfer brings about adjustments in the terms of trade, in the degree of specialisation, in the skill premium, and in welfare even in situations where the previous literature found that a transfer is neutral on the equilibrium. All these effects are

---

[4] Incidentally, as I will discuss below, their result is consistent with my model.