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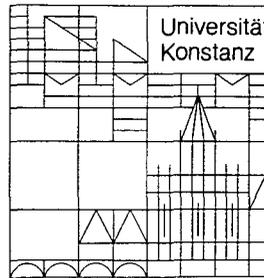
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Reasons
Behind Barter Reconsidered

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REASONS BEHIND BARTER RECONSIDERED

Günther G. Schulze

Serie II - Nr. 103

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Contents

1. Introduction
2. Traditional Explanations for the Existence of Barter Trade
3. Domestic Price Controls: Marketing the Surplus
4. Circumventing Administrated Exchange Rates
5. Barter Trade and the Temptations of International
Price Controls
6. Tax and Tariff Evasion Through Barter
7. Conclusions

List of Abbreviations

References

Abstract

Traditional explanations for the existence of barter trade have only very limited explanatory power. In particular, barter trade can neither overcome liquidity shortages nor make up for marketing deficiencies. It is argued that barter trade makes sense only in the presence of interventions in national and international markets. Owing to its opaque and selective character, this archaic and highly inefficient form of trade enables a certain degree of flexibility in rigid situations to be regained which are maintained for various political reasons. Barter trade may help to unload surplus production, caused by domestic price controls; it can act as a selective devaluation, when the domestic currency is overvalued and windfall profits can be obtained via barter by underpricing of a cartel's official price. Finally, barter trade enables the evasion of taxes and tariff liabilities. Hence it follows that this form of trade may be regarded attractive for decision-makers, given the underlying distortions as a parameter.

1. Introduction

In the last few years, countertrade (CT) has attracted growing attention in the economic literature.¹ Although estimates differ widely, ranging from 1 % (IMF) to 25 % (US Department of Commerce)² of world trade, it is generally believed that countertrade is of rising importance in international trade.

The term "Countertrade" comprises a variety of practices, each of which involve some sort of mutual exchange: The initial export is linked to a (subsequent) import from the country of destination. The contracts can be distinguished either according to the period of time between two transactions, the economic and technical relation between the goods exchanged, as well as according to other factors.³ As this paper is not concerned with detailing the problems of the mechanics of countertrade⁴ it distinguishes only three main types of countertrade: barter, counterpurchase and buy-back.⁵

Pure barter, the oldest form of countertrade, consists of the direct exchange of two sets of goods, which normally bear no relationship. No money is involved and this single mutual exchange of goods takes place at more or less the same time. Nowadays, both purchases are paid for in cash, but the requirement for bridging finance is very low due to the approximate coincidence of the two transactions (so called "classical barter"). Unlike barter, counterpurchase is long term in nature (typically lasting one to five years) and combines two separately financed and independently proceeded trade flows; the goods exchanged are not technically related. Buy-backs commit the exporter of machinery or a production plant to purchase a fraction of the output generated from the equipment delivered. It is a long term contract (typically it lasts 5 to 10 years, but up to 25 years is not uncommon) and both business transactions are concluded separately.

It is commonly accepted that countertrade is an inefficient way of exchanging goods since it considerably increases costs for the following two reasons: Firstly, countertrade restricts trading opportunities by not allowing buyers to use the most competitive supplier, or not to sell to the highest bidder.⁶ Hence, countertrade leads to market distortions and misallocation of resources as more competitive suppliers may not get a chance, and inefficient producers may flourish.

1 See Banks 1983:159, Debroy 1987.

2 See Sell, 1988: 454; IMF 1988: 29. The data basis is poor because countertrade transactions usually are not reported as such in trade statistics. Schuster, 1988: 14., UNCTAD 1989: 56.

3 E.g. legal aspects, number of parties involved, see Schuster 1988: 31 pp, Bürgin 1986: 1 pp.

4 These are described in Business International 1986a.

5 More comprehensive agreements (e.g. bilateral clearing agreements, switches) and forms of countertrade that are used only in very special markets (like offsets in markets for military equipment) lie beyond the scope of this paper. For detailed information please see Verzariu 1985.

6 Moreover, not every market participant is willing or prepared to engage in CT. Hervey 1989: 34.

Countertrade offerings, not competitiveness regarding price, quality etc., become decisive⁷. Secondly, even if the costs of restricted supply could be ignored, countertrade would still increase transaction costs. For countertrade to take place, a "*double coincidence of wants*"⁸ is required. Resources are wasted in searching for a countertrade partner and meeting his requirements. Moreover, the products received in exchange for the original export are often not related to the sector of business of the exporting firm. As a consequence, marketing implies extra efforts. These effects will worsen the terms of trade (for the trade partner requiring the barter deal) and will thereby tend to reduce the volume of trade.

But why then is CT applied to a growing extent? As shown in section 2 it all comes down to this: The traditional economic interpretations have only very limited explanatory power - they cannot provide us with a rationale, why (so much) refuge is taken in an archaic and apparently inefficient form of trade. In particular, it is shown that barter trade can neither overcome liquidity shortages nor make up for marketing deficiencies. It cannot completely be ruled out that there are decision-makers in less developed countries (LDCs) or centrally-planned economies (CPEs) who remain unaware of the described inefficiencies, but it is hard to believe that the majority are blind to the real situation. This paper explains the existence of BT with the help of a political-economic argument. The argument roughly runs as follows. Although CT is not in the interest of the economy as a whole, there do exist individuals or groups who benefit from it. If these agents are able to influence the political process, CT can well emerge in the political-economic equilibrium. Hence, scenarios will be sketched, in which barter trade is adopted and groups will be identified that profit from it.

This paper focuses on barter trade⁹ (with a 100 % compensation ratio), because it is the original form of CT and has the typical characteristics of CT; this paper is not concerned with the technology of CT but with the underlying phenomenon (payment in kind). Moreover, it is confined to the case of market economies, because CPEs may have other motivations for bartering in the first place (such as planning security).¹⁰

The paper is organized as follows. Traditional explanations for the existence of barter trade are briefly discussed in section 2. Section 3 deals with barter as a reaction to domestic price controls illustrated by the case of agriculture. In section 4, barter is analyzed in the light of exchange rate distortions while international price controls as an inducement to barter are investigated in

7 Furthermore, if governments mandate CT third country suppliers are put on disadvantage due to restrictions on imports and exports which usually go along with CT mandates or authorization. The effect of mandated CT on third countries are analyzed in Walsh 1985.

8 "*There may be many people wanting, and many possessed of those things wanted; but to allow an act of barter, there must be an double coincidence, which will rarely happen*". Jevons, William: *Money and the Mechanism of Exchange*, London, Appleton, 1875, p.3, cit. from Banks 1985: 255.

9 For the - somewhat different - rationale for buy-backs see Hennart (1989), Mirus/Yeung (1986).

10 See Banks 1983: 173 pp and Altmann/Clement (1979).

This confinement, however, does not exclude government regulations of foreign trade, which are very common in market-oriented LDCs.

section 5. Tax and tariff evasion as a reason for barter is sketched in section 6. Section 7, finally, summarizes the result and provides some conclusions.

2. Traditional Explanations for the Existence of Barter Trade

Why is such an archaic form of payment used, nullifying all the advantages of monetized trade? Proponents of countertrade commonly put forward three explanations, one of which is recent.¹¹ It is argued that countertrade helps to bridge the foreign exchange gap, which many less developed countries have to cope with. By stimulating exports and thus making necessary imports possible, CT is said to foster industrial and social development: Trade is facilitated and additional hard currency is generated. Barter trade certainly reduces the need for foreign currency, because imports do not have to be paid for in cash. At the same time, however, exportable goods involved in barter do not earn hard currency: demand and supply of hard currencies are thus reduced simultaneously, the liquidity shortage is not mitigated. On the contrary, countertrade widens the foreign exchange gap! Since CT-partners from developed countries will not accept products unsaleable in markets within industrialized countries, these products have to be competitive on principle. This means, however, that LDCs or CPEs could sell their products independently of their import activities on world markets on the basis of the implicit barterprice.¹² In so doing, they could circumvent the disadvantages of bilateralism, reduce costs and obtain a higher (relative) price for their exports.¹³

Proponents of CT however would contradict this line of thought and argue that it is only a theoretical possibility since countries imposing CT (ordinarily LDCs, CPEs) suffer from a lack of marketing capabilities. CT is said to serve as a marketing tool, exploiting market information and the sophisticated marketing channels of the CT-partner. In other words, CT establishes the efficient solution to the barriers blocking entry to western markets which are created by insufficient marketing knowledge.¹⁴ To be sure, it is true, that deficient marketing expertise represents a severe development constraint, but it is by no way obvious that CT holds the key to this problem. Why do these countries not hire a Western export development agency or a trading company and pay them in cash? The advantage is twofold: Firstly, if the goods exchanged bear no technical association, the CT-partner will have no special proficiency in

11 Amann/Marin 1989.

12 The implicit barter price for the good exported by the LDC (P_x) can be calculated as follows:

$$P_x = P_{M,W} \frac{M}{X} + C/X$$

where $P_{M,W}$ denotes the price for the import good on the world market, C the amount of money paid to the CT-partner in case of partial compensation and M and X the amount of goods imported and exported, respectively. The exchange rate is defined to unity.

13 Miramon 1985.

14 Welt 1985: 5; see Alexandrides/Bowers 1985: 24 pp for a detailed list of issues in which the CT-partner can assist an LDC or CPE exporter.

marketing the goods concerned. Special CT-branches must be set up and the considerable costs which this will involve will - at least partly - be shifted to the exporter. Alternatively the potential exporter could look for a Western trading company or export development agency with existing expertise in that field. Secondly and more importantly, the severe handicap of bilateralism is eliminated (see above). Besides, CT does not surmount but perpetuates the marketing deficiencies as the LDC exporter has no direct interface with the customer.¹⁵

The third argument runs as follows (see Amann/Marin 1989). A supplier M from a western industrialized country who has some monopoly power (although he is not a monopolist since the authors assume that L has an outside option to buy M's product) strives to enter the market of L (either a LDC or a CPE). M's entry, however, is dependent on his commitment to barter. L in turn can sell his products for cash on western markets only with a net loss¹⁶ - or by means of a barter deal. Hence, this deal is in effect "*an exchange of entry into each other's market*" (Amann/Marin 1989: 4): Barter allows the transferral of some of the monopoly rent from M to L¹⁷, which is used to subsidize L's exportables. Due to the ultimate outcome of the bargaining process, it might be favorable to barter. M sells its product for a lower-than-usual price, thereby making consumers better off, whereas the subsidy of L's product will increase welfare, if it has an underlying comparative advantage, or if L has to cope with a "*reputational barrier to entry*".¹⁸ Thus, barter may be an efficient answer to the market distortion described above.

If L is in a position to refuse M's entry into his market, it is consistent to assume that he can also levy an (*ad valorem*) import tax so that the same amount of monopoly profit (as in the barter deal) is siphoned off. This tax revenue could either be used to subsidize the export good that would alternatively be bartered or another exportable, or for some different purpose. Thus, direct taxation as opposed to an implicit one, raises the degree of freedom and thereby welfare, allowing these resources to be used in the most efficient way.¹⁹ Furthermore, transactions are separated, and the disadvantages of bilateralism and enhanced transaction costs are avoided.

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- 15 This becomes increasingly important in a dynamic marketing environment since producers have to meet rapidly changing requirements concerning product design, function, after sales service etc. This argument applies in principle also to sales through traders. Hiring a consulting agency may establish a viable solution. See Kopinski 1987: 11.
- 16 It is argued, that this fact rules out the possibility to sell L's product through a western trading house (Amann/Marin 1989: 6).
- 17 M still holds a nonnegative profit and has therefore an incentive to barter.
- 18 See Amann/Marin, 1989: Consumers, prejudiced against goods from LDSs/CPEs are incompletely informed about the - underestimated - quality of L's products.
- 19 It must be noted that subsidization only makes sense if the product has an underlying comparative advantage in order to obtain scale effects or learning curve effects (of producers as well as of incomplete informed consumers).

3. Domestic Price Controls: Marketing the Surplus

The agricultural case is very well known: Many industrial countries have imposed a protectionist scheme consisting of high import taxes on agricultural goods coupled with a system of minimal prices at which the government guarantees to purchase unlimited quantities of the respective commodity. This policy establishes a persistent incentive to expand output as long as controlled prices exceed (marginal) production costs. The resulting distortions come into effect when shadow prices fall short of controlled prices since farmers sell to the government at the more favorable and controlled price. In other words, government intervention constitutes a price floor thereby depriving prices of their market clearing function.

The reasons behind this sort of protectionism are as well known as the consequences.²⁰ The advocates of protectionism are regularly much stronger than their opponents, both because the former group is much smaller and thus in a position to be better organized and consequences of protectionist measures are considerable and directly efficacious for producers but difficult to predict and often of negligible size for consumers. Moreover, as free trade is a public good there is a strong incentive to free-riding behavior, even more so because consumers as opposed to producers are a very large group and social control is practically impossible.²¹

This line of argument explains the existence of protectionism in agriculture as the result of powerful lobbying activity. Yet it does not demonstrate why this redistribution scheme is not replaced by a less costly one of direct income transfers. Once such a price-supporting intervention mechanism is implemented, the enhanced profits of farming products are quickly capitalized into the value of land (i.e. the discounted expected flow of net profits) and investment decisions as well as acquisitions are made on this basis - Tullock's "transitional gains trap":

"Whoever owned a farmland at the time the program was instituted made immense gains, but these gains were fully capitalized. We are now stuck with the situation in which there are significant social losses, but a powerful political group would suffer transitional losses by the termination of the program".²²

The lobbying power of farmers ensures that this practice is maintained. Politicians, facing this situation, seek to use available funds efficiently. Starting from the assumption of a given budget,²³ resources are efficiently exploited if the marginal utility (to the politician) is equal in each use, at which this marginal utility is a function of the votes obtained (for the reelection)

20 For a more detailed argumentation see Frey 1985: 15 pp.

21 As this rationale is considered basic for the political economy it will not be pointed out here in detail. See Hillman 1989 and the literature cited there.

22 Tullock 1975: 675.

23 It is obvious that the size of the budget itself is an endogenous variable resulting from an optimization calculation. But the determination of an optimal budget lies beyond the scope of this paper.

and the rewarded funds in response to the political measure adopted. Hence, reselling price-support inventories lowers the costs of protection²⁴ (in contrast to the maintenance or the annihilation of agricultural "lakes" and "mountains" etc.) and releases funds for other purposes. Moreover, farmers regard large governmental stocks as a political liability that calls the continual payment of their subsidies into question.²⁵

Two problems arise: Firstly, in order not to undermine the policy pursued, the surplus commodities must be sold to markets in which no domestic suppliers will be crowded out (this would increase the surplus sold to the government) and these markets have to be segmented to prevent price-depressing arbitrage (this postulate is called "additionality"). This speaks well for the sale on low-income or CPE markets.

Secondly, heavy subsidization is conditional on exports (otherwise farmers would have exported on their own) but limited by GATT provisions. Article XVI paragraph 3 condemns every export subsidy that "*results in that contracting party having more than an equitable share of world export trade in that product...*"(emphasis added).

The first difficulty applies both to normal sales as well as to barter; barter, however, is a means to disguise heavy subsidization.²⁶ Barter trade is regularly carried out by two separate monetized transactions, often linked only by an unpublished "protocol". The nature of the deal is veiled and thus the price in a single transaction does not provide any indication of the extent to which the sale was subsidized (as the underlying exchange ratio could only be calculated if the associated deal was known). This lack of transparency allows barter to become an adequate means of mitigating home-made distortions: surplus commodities are unloaded without triggering off political repercussions or provoke retaliative measures.²⁷

As far as the second argument is concerned it is argued that barter might "*provide a legal defence when unlinked sales would not*" (see Banks 1985: 253). This is a precarious line of argument: Though GATT does not deal with CT explicitly, CT contradicts basic principles of the GATT.²⁸ GATT's multilateral character - expressed by the Most-Favored-Nation (MFN) Clause in Art.I GATT - is irreconcilable with the bilateralism and the selectivity of barter trade. Moreover, barter trade is inconsistent with Art.III GATT (prohibition to use internal taxation and regulation as protectionistic means) if - as usual - imports are made dependent on the

24 Any price (P) exceeding the marketing costs (CM) minus the minimum of storage costs in the fiscal year (CS) and the costs of destruction (CD) expands the budget constraint of the government.

$$P - CM \stackrel{!}{>} - \min (CS ; CD)$$

25 See Banks 1985: 252.

26 It must be noted, however, that governments do subsidize farmers' exports also directly, see Banks 1985.

27 which were foreign governments strongly requested to adopt by their farming lobbies.

28 Gadbar 1983. Since GATT rules regulate only government behavior, the extent of government involvement in BT is crucial for legal judgement (Regulations, laws, state-trading enterprises). Pure private BT does not conflict with GATT. Roessler 1985: 605.

commitment to purchase in turn.²⁹ Barter trade can also contradict the principle of general elimination of quantitative restrictions, "*whether made effective through quotas, ... licences or other measures*" - (Art.XI:1 GATT, emphasis added), if an enterprise cannot export to the country under consideration except by means of a barter deal. Then, barter trade requirement works like an import quota adjusted to some domestic market criterion (here: value of exports).³⁰ Even though CT is not subject to explicit GATT rules contracting parties of the GATT can complain about the deterioration of their economic situation due to "*the application by another contracting party of any measure, whether or not - it conflicts with the provisions of this Agreement...*" (Art.XIII:1b GATT, emphasis added). It hence follows that barter trade, once it is revealed, cannot be legally justified better than any other discriminatory trade practices.³¹

Owing to its intransparency, however, BT may act as a good vehicle to evade the MFN clause and for instance to support an ally by preferential treatment. Therefore, two political aims can simultaneously be achieved - the utility derived from BT increases.

4. Circumventing Administrated Exchange Rates

Barter trade can be regarded as a "solution" to a further policy-made distortion: namely an overvalued currency.³² The reasons for overvaluation of the domestic currency are manifold. For a small open economy - the typical scenario for LDCs - the prices for tradeable goods denominated in foreign currency can be seen as parameters. If export prices are eroded and the exchange rate remains fixed (i.e. the terms of trade worsen) production of exportables can become unprofitable. Also, if the economy experiences inflation³³ upward pressure is placed on the relative price for non-tradeables since production costs (wages and domestic intermediate goods) rise, while revenues obtained from the sale of tradeable goods (as opposed to non-tradeables) remain fixed because they are determined by world markets. If the distorted exchange rate is maintained, resources will be inefficiently allocated. Export and import substituting activities will be discouraged, production factors will be shifted to the non-tradeable sector, and the foreign exchange gap will be widened as a result of a loss in international competitiveness.³⁴

29 In particular, paragraph 5 forbids provisions making imports conditional on the domestic origin of a certain percentage of the respective good - the analogy to CT is obvious. Gadbow 1983: 260.

30 For detailed argumentation see Gadbow 1983.

31 For a more minute analysis of the legal implications of BT see Gadbow 1983 and Roessler 1985. Roessler (1985) gives special consideration *inter alia* to state-trading enterprises and government procurement policy.

32 The home currency is overvalued if the (official) price of foreign currency is below its "equilibrium" value resulting in a persistent excess demand for it.

33 To be precise: The (positive) inflation differential to the trade partner matters.

34 Nashashibi 1983: 14; Khan/Knight 1982: 711.

Devaluation is the appropriate answer to this problem: For given world market prices, the prices for tradeables denominated in domestic currency will rise, thus altering their price (relative to nontradeables). This will respectively either stimulate aggregate supply to the same extent as the utilization of free capacities becomes profitable, or in full employment situations trigger off the shift of resources to export and import substituting activities, thanks to the improved expected profits. If the favourable situation is believed to continue³⁵ investment will rise and hence employment. Furthermore, the foreign exchange gap is reduced because the value of exports will tend to rise and the value of imports will not increase, assuming that the Robinson condition holds.³⁶

If a devaluation is ruled out for various reasons direct export subsidies can alleviate distortions. Export subsidies (when not accompanied by taxes or tariffs) place an additional burden on an already strained budget, which is typical for LDCs. Moreover, because of their transparency, export subsidies may provoke countervailing measures, hence negating their intended effect. As noted above, heavy subsidization of exports may be viewed as inconsistent with Art. XVI GATT by other countries. If export subsidies are ruled out in turn, barter trade may serve as a "third best solution". Uncompetitively priced goods are exported in exchange for imports which are purchased at a premium. In so doing, the exchange ratio (or the relative price) can be approximated to the one which would result if the foreign exchange rate were not overvalued. Hence, this implicit tax-cum-subsidy can be regarded as a selective devaluation tailor-made for each transaction.³⁷ In so far, barter trade works somewhat similar to multiple exchange rates.³⁸ The rationale for barter trade here is in essence an explanation as to why governments repeatedly shy away from devaluating their currency.

One has to bear in mind that policy-makers in developing countries regularly have a relatively short planning horizon as regimes are considerably less stable and the consequences of a change in power are much more serious (for the politicians concerned) than in Western countries. Therefore, attention must be focused on the impact effects of devaluation.³⁹

The first objection to devaluation is simply that it does not work. Import prices rise immediately along with the rate of devaluation. This will reduce the demand for imports according to the

35 This refers to revenues (world market prices multiplied with the exchange rate, sales prospects, protectionism) as well as to costs (labor unit costs, prices for intermediate goods etc).

36 Note that in the case of a small open economy the price elasticity of export demand (η_x) amounts to $\eta_x = -\infty$.

37 Banks 1985: 261.

38 Why don't these countries adopt multiple exchange rate practices for the sake of simplicity? Firstly, a variety of countries actually have split exchange rates, but these practices are subject to the repeated approval by the International Monetary Fund. The IMF authorizes "*multiple currency practices only when a well-conceived plan is in place to bring about their elimination or substantial simplification during a relatively short period of time.*" (IMF 1988: 27) Secondly, case-by-case decisions increase the discretionary scope of politicians or bureaucrats and hence the rewards for convenient decisions paid by those placed at advantage.

39 Cooper 1971: 474.

price elasticity of import demand η_m . The value of imports will diminish, if $\eta_m < -1$. This elasticity, however, is often very low (in absolute terms) for LDCs, as these countries limit their imports to "essentials" such as foodstuffs, raw materials (in the first place energy) and capital goods. There are nearly no substitutes and imported intermediate and capital goods cannot be dispensed with if domestic production is to be maintained.⁴⁰ As far as imports are intermediate goods for the export industry they undermine the stimulating effect of a devaluation.⁴¹

On the other hand, price elasticity of export supply may be low for many LDCs because the degree of substitution between export goods and domestically demanded goods is small.⁴² Resources cannot be easily diverted for export purposes. A costly and time-consuming reallocation of production factors is inevitable.⁴³ A low price elasticity of the supply for exports together with a low price elasticity of import demand may create a situation in which the value of imports increases more than the value of exports, and hence cause the balance of payments situation to deteriorate. Though there is empirical evidence that this does not apply to industrial countries or to the majority of developing countries,⁴⁴ it cannot be ruled out that the pessimism concerning the elasticities may be justified for some countries. Even if elasticities are very low, devaluation triggers off developments which will lead to higher elasticities in the medium and long term.⁴⁵ The long term effects are however usually not of great concern to the decision-makers in LDCs.

The second objection to devaluation is related to the first. A devaluation *ceteris paribus* raises the domestic price level via increased import prices, thereby partly offsetting the initial effect of a devaluation in the relative price between tradeables and non-tradeables.⁴⁶ If unions demand compensation for an increased cost of living, labor costs are pushed up and the incentives to expanded export activity are further eroded, as increased costs cannot be shifted forward into the export and import competing sector. A new devaluation would soon become necessary. If an inflation-devaluation spiral is to be avoided, devaluation must be accompanied by an anti-

40 "For many less developed countries, those imports potentially competitive with domestic production (implying a relatively high degree of price substitution) have long ago been effectively excluded through tariffs and other policies of import substitution" Cooper 1971: 488.

41 Since the case of a small open economy is considered the price elasticity of the demand for its exports is very high in absolute terms as well as the price elasticity of the supply for imports. If, however, a country's exports are restricted by protectionistic measures like quota in the framework of, for example, the Multi-Fibre Agreement world elasticity for export demand can be considerably lower!

42 This applies especially to raw material exporting LDCs.

43 Crockett 1981: 59. Furthermore, the elasticity of export supply depends on various factors such as gestation period of production, idle capacities, availability of investment finance. Bird 1985: 101 - 103.

44 Himarios (1989) and the literature cited there; Cooper 1971: 477 pp.; Bird 1985: 104-105. Note that elasticities increase with the period under consideration.

45 Crockett 1981: 70.

46 Khan/Knight 1982: 725. The *ceteris paribus* condition does not always hold since devaluations often move in tandem with the relaxation of protectionistic regulations with the result that nominal devaluation exceeds effective devaluation. Bird 1985: 103.

inflation policy.⁴⁷ A deflationary policy that restricts domestic absorption relative to domestic production, will however (at least) temporarily depress both output and employment.⁴⁸

If restrictive monetary policy is adopted, the loss in output and employment is disproportionately distributed: The modern sector (manufacturing industry, services) suffers more heavily than the traditional agricultural sector because it is more dependent on credit.⁴⁹ In other words, urban population would suffer - at least transitional - losses; but it is the support of the urban population that is crucial for the (political) survival of the government, because this group is relatively well informed, and organized in pressure groups whereas farmers are regularly of no importance as far as the political process is concerned. Moreover, civilian as well as military bureaucracy is formed by urban population, and the support of bureaucrats is almost a *conditio sine qua non* for many LDC governments.

If demand is managed by a tighter fiscal policy, the political effect depends on the government activity that is discontinued. Riots triggered off by the end of basic food subsidies may serve as an example.⁵⁰ In any case, it must be noted that demand management may have a strong redistributive impact.

Moreover, the effect of a devaluation as such, leaving aside the anti-inflationary measures, may also have a temporary depressing effect. True, devaluation tends to expand export activities and hence production and employment. If, however, import expenditures have risen, only a smaller fraction of domestic absorption is satisfied by domestic production.⁵¹ Size and sign of the net effect depend on the individual case.⁵² It is commonly believed that devaluations generally tend to temporarily reduce the output and development of LDCs because of their structural rigidities described above.⁵³ These adjustment costs may be regarded as prohibitive by politicians in developing countries.⁵⁴

A third argument against devaluation is its undesired income redistribution effects (apart from those of the demand restriction; see above). These effects depend largely on the degree of factor mobility.

47 Nashashibi 1983: 15-16; Cooper 1971: 492-493.

48 Khan/Knight 1982: 715.

49 Khan/Knight 1981: 30.

50 Demand can also be restrained by increased taxes. Whether this will lead to political repercussions, depends on the circumstances of the individual case (e.g. taxable entity, tax base, tax-rate table, resistance to taxation).

51 Cooper 1971: 487 pp. There is some empirical evidence that this is not uncommon. Bird 1985: 105.

52 The higher the import ratio and the lower the price elasticity of demand for imports the stronger will be the deflationary impact of a devaluation.

53 See Khan/Knight 1981; Khan/Knight 1982: 726-727.

54 For simulations of adjustment costs (increase in level of unemployment and domestic price level) see Khan/Knight 1981. They analyze the effects of different stabilization programs.

The one extreme is the specific factors model with an immobile factor of production in each sector (usually assumed to be capital) and a perfectly mobile factor (labor) which is used in both sectors, the tradeable and the non-tradeable sector. If *ceteris paribus* the price for tradeables rises owing to the devaluation, the real return to the specific factor in the tradeable sector will increase while the other specific factor will yield less profit. Nominal wages will also rise though to a lesser extent than the price for tradeables. Whether real wages will rise or not depends on the consumption pattern: Real wages have respectively risen, expressed in units of nontradeables, or fallen, expressed in units of tradeables.⁵⁵

The other extreme, the Heckscher-Ohlin model, assumes two perfectly mobile factors of production, hence factor prices are the same for each sector. It is assumed that the non-tradeable sector is relatively labor intensive, since it consists to a great extent of services. Then, a price increase for tradeables will *ceteris paribus* raise profits and lower wages. This is known as the Stolper-Samuelson-Theorem.⁵⁶

These two findings are subject to qualifications as the assumptions are too unrealistic. Prices will rise throughout the economy, although to a lesser extent in the non-tradeable sector. There are many industries with different factor intensities and many factors of production. Thanks to the devaluation, which it is assumed will not be fully negated by a price-wage spiral,⁵⁷ prices of exportables will rise as well as those of import substitutes according to their degree of substitution. Hence, factors specific to the tradeable industries will be paid higher wages (e.g. specific qualified high skilled labor), or profit margins will be enlarged whereas labor and specific factors of the nontradeable sector will be worse off. Real wages of non-specific labor will tend to shrink.⁵⁸ There is some empirical evidence supporting the thesis of depressed real wages.⁵⁹ This reduction of real wages contributes to the curtailment of absorption, necessary for the improvement of the balance of payment situation. Nevertheless, governments may be reluctant to adopt these obviously redistributive measures, in order to remain in power since many workers in the modern sector live just above the poverty line and will not accept a further reduction in their standard of living.⁶⁰

Without citing all reasons, another - irrational - one for non-devaluation is adduced: national prestige! Frequently, a devaluation is seen as a proof of political and economic incompetence. Even if decision-makers understand the inherent laws of economics, their voters may not. Thus,

55 Dixit/Norman 1980: 40-41. Hillman 1989: 10 pp.

56 Dixit/Norman 1980: 12-13. Owing to its extreme assumptions concerning factor mobility this model is appropriate only for long term considerations.

57 There is empirical support for this assumption to be realistic; see Cooper 1971; Bird 1985: 110.

58 Cordon 1985: 22 pp.

59 Cooper 1971: 490 pp.; Khan/Knight 1982: 270.

60 There are further redistributive effects for example, the value of financial assets will fall owing to price increases. Moreover, redistribution must be regarded in the light of consumption behavior: Those who consume a relatively high fraction of tradeable goods will lose *ceteris paribus* in comparison to the average consumer. Cordon 1985: 28.

it may be reasonable for them to behave in an irrational way - from an economic point of view.⁶¹

Why is open and general devaluation rejected when selective devaluation via barter trade is not? The answer simply lies in its selectivity and the opacity which make barter trade so attractive to policy-makers.

The selective character of barter trade allows to devalue only those activities that respond favorably to a devaluation. Ideally, if there are export industries with idle capacities, a selective devaluation will help them to gain a competitive edge without incurring adjustment costs. If the demand for the associated import good in turn is price elastic, this selective devaluation will improve the balance of payments, whereas an overall devaluation may not. Furthermore, if the scope of devaluation is limited, inflationary pressures will be kept in check and the need for a costly and politically disastrous policy of deflation is reduced. If barter trade is carried out through a state-owned trading agency, it puts politicians in a position to discriminate among domestic suppliers. This enhanced influence which politicians wield enlarges the possibility of their being bribed by domestic exporters and foreign importers, who seek rents.

Thanks to the veiled character of the transactions, barter trade renders it possible to profit from devaluation without offending national pride. Because of its opacity, barter trade is an appropriate instrument to hide unpopular redistribution of incomes but nevertheless to achieve the desired results to a certain extent. Policy-makers can boast to have resisted devaluation and simultaneously redistribute income in favor of factors specific to, or intensively in, export industries as well as in import-substituting industries (mainly capital owners).

To cut a long story short: In the light of an overvalued currency it is the export enterprises or industries (and hence the factors specific to it) as well as the politicians striving to be supported by those groups that benefit from barter trade.

Again the opacity of barter trade is the underlying motivation to resort to it in the following chapter: It represents an adequate response to the temptations of international price controls.

5. Barter Trade and the Temptations of International Price Controls

Deviations from free market solution cannot only be observed within in the framework of national policies, market distortions are also due to international price controls. Members of a cartel face a multilateral prisoners' dilemma. They maximize their long-run profits when they all charge the agreed price, which lies above the free market's level (that is the reason for joining the cartel). If, however, a member undercuts the cartel's price, he will be better off, provided that the demand for his (cheaper) supply will react price elastic (the elasticity

61 There are certain indications that devaluation is associated with a "somewhat higher likelihood of a fall of the government. The chance that a finance minister will lose his job is substantially higher." See Cooper 1971: 500 pp, esp. 504.

exceeding one in absolute terms) and that other cartel members will not react.⁶² In this situation, he will gain a bigger share than in an uncartellized market, because of the price differential between him and his competitors. The final outcome of undermining the cartel depends on its reaction. In case it maintains the price level, underpricing was a success. If, however, instead of reducing their quota in order to support the price, other suppliers also cut prices to defend their shares, prices will be eroded and everyone in the cartel will be worse off.⁶³

A clever way to make the others tolerate the price cut is to conceal it by means of a barter deal. The exported commodity is sold at the official price while the associated import is overvalued. The incentive to do so rises if

- outsiders enter the market (due to high prices) thereby depressing prices and/or reducing demand for cartel's output
- demand is diverted to cheaper substitutes and quotas are not adjusted
- members are dissatisfied with their quota or their share of total output
- a member's discount rate rises suddenly.

All of these factors apply to the case of OPEC.⁶⁴ Additional suppliers (United Kingdom, Norway) entered the market, world demand for crude oil temporarily declined⁶⁵ (as a consequence of fuel-substitution and energy saving measures), and both Libya and Iran were dissatisfied with their export share in the course of embargos. Finally, the war between Iran and Iraq made the requirement for funds surge. Realistically one must not assume that repeated price cuts by OPEC members could permanently be disguised. Yet from the political point of view, there is a big difference between an implicit price reduction by means of a barter deal, and an open violation of official prices.

A somewhat similar case can be made for international commodity agreements. The declared aim of those agreements between producers and consumers of a special commodity is to stabilize world market prices. Buffer stocks are established in order to equalize price fluctuations, and "price floors" as well as "price ceilings" are agreed upon. In most cases, "price floors" if not adjusted have tended to expand world production as purchases were guaranteed by buffer stock managers as opposed to world demand, which has declined because of long-term trends towards substitutes and a more efficient use of these raw materials. Hence, in many cases "price floors" have been above market clearing levels. When buffer stocks run the risk of being full, commodity agreements can resort to export restrictions as in the case of the

62 Note that an elastic demand reaction is not a sufficient condition for increased profits. The reduction of profits per unit must be overcompensated by an increase in sales volume: The cost function must be taken into account.

63 Banks 1985: 256 pp. For a game theoretical treatment of the underlying situation (a n-person analogy to the prisoners'dilemma) see Luce/Raiffa 1957: 95 pp.

64 Banks 1985: 256-257; Alexandrides/Bowers 1987: 31-32.; Cooper 1984: 39.

65 Brigg 1985: 12.

international tin agreement. The parallel to a cartel becomes obvious.⁶⁶ If export restrictions take the form of quota, barter does not seem to be a very favorable way to undermine regulations. If, however, minimum prices are fixed, barter trade makes concealed discounts possible, so much the more so since commodity agreements typically comprise many parties who can hardly be kept under proper surveillance.⁶⁷

6. Tax and Tariff Evasion Through Barter

A domestic importer or, respectively, a foreign exporter facing an *ad valorem* import tariff can partly evade overall income tax and tariff liabilities by means of a barter deal. (At least) for a compensation ratio r of 100 percent both trade partners are better off if they understate the nominal worth of transactions at identical ratios: Each trade partner reduces the sum of tax and tariff payments and the exchange ratio will be the same as if they state the true market values. This finding is due to the fact that at least for $r = 1$ tariff saving owing to underdeclaration exceeds increased tax liabilities⁶⁸ and the assumption that the probability of being detected depends positively on the amount of misdeclaration.⁶⁹ This qualitative outcome ("understating is rewarding") remains also valid if we consider different types of penalty functions. For a detailed formal analysis of this problem the reader is referred to Schulze (1989).

The saving of payments to the authorities can be divided between the two parties in order to cover additional transaction costs and to realize "extra profits"⁷⁰ or (after having covered extra costs) it can be used to lower prices as a vehicle to make exports to the importing country possible.⁷¹ In other words, barter trade may serve as an instrument to illegally moderate protectionism.

If creditors and debtors agree that a specific fraction of hard currency earnings must be earmarked for the debt service, a debtor country could circumvent this regulation, to which it may only have agreed under duress of the need for additional loans, by understating its exports.

In both cases, a problem may arise in finding a partner to take part in this illicit transfer.

66 Gill/Law 1988: 292-294.

67 Banks 1985: 259.

68 Since imported intermediate goods (including tariffs) are costs they reduce the tax base (pre-tax profit).

69 Moreover it is assumed to be twice continuously differentiable and convex.

70 These are "extra" only in the light of protectionistic distortions.

71 Both trade partners are regarded as players in a cooperative game aiming at the minimization of payments to the authorities and thus, the division of the gain from this evasion is a game theoretical problem and not of concern in this context.

7. Conclusions

None of the traditional explanations provided in literature for the existence of barter trade stands up to closer examination. Barter trade will neither overcome hard currency shortages, nor does it represent the best possibility to make up for marketing deficiencies. Furthermore, it is by no means the most advantageous instrument to shift some monopoly rents of exporters to the importing country in exchange for market entry. Rather, this archaic form of trade is highly cost-intensive and leads to market distortions.

As shown above, barter trade makes sense only in the presence of interventions in (national and international) markets. It is a vehicle to regain a certain degree of flexibility in rigid economic situations, that are maintained for various reasons, which can be explained with resort to International Political Economy. Barter trade opens up a way to get rid of surplus production, which is stimulated by domestic price controls (guarantee prices) without triggering off counter measures from other countries. Moreover, barter trade can act as a selective devaluation. It may mitigate disastrous consequences of an overvalued currency, when an overall devaluation is ruled out on various (political) grounds such as undesired redistributive effects of a devaluation, unacceptable adjustment costs (temporary unemployment, fall in output), pessimism concerning the balance-of-payments reaction or national prestige. Barter is also adopted in order to exploit the situation of an international cartel: Windfall profits are realized by means of disguised price cuts. Tariff and tax liabilities are (partly) evaded via barter when values traded are wrongly declared without changing their relative price. Hence, barter is a reaction to heavy protectionism.

Two properties make this wasteful way of trade so attractive: Its selectivity and its opacity. The former enables discrimination, the latter seduces to cheat. To have discretionary scope implies greater influence and this in turn implies enhanced benefits as a result of rent seeking activities and also in the form of more political support by voters. Opacity respectively empowers the undermining of restrictions without openly violating them, or the adoption of measures in favour of one pressure group without offending the group placed at a disadvantage.

It must be noted, however, that the characteristic effects of the respective barter deals will not remain unrevealed in the long run - otherwise this study could not have been written. Then, offended pressure groups may react and tend to nullify the advantages of BT. At most, barter trade is a short term solution. Barter trade only cures the symptoms - at the expense of wasted resources and newly created distortions - without looking at the root cause; but it is an appropriate instrument for rational decision-makers (politicians as well as traders) to pursue their self-interested policy in the light of policy-created distortions. Thus, in order to contain these inefficient practices, the underlying distortions have to be prevented. But this is another complex of problems which has again to be viewed from a Public Choice perspective.

List of Abbreviations

BT: Barter Trade

CPE: Centrally Planned Economy

CT: Countertrade

GATT: General Agreement on Tariffs and Trade

LDC: Less Developed Country

MFN: Most Favoured Nation

References

- Alexandrides, Costas, Bowers, Barbara (1987), *Countertrade, Practices, Strategies and Tactics*, New York et al., John Wiley & Sons.
- Altmann, Franz Lothar, Clement, Hermann (1979), *Die Kompensation als Instrument im Ost-West-Handel*, Gutachten im Auftr.d. Bundesministers f. Wirtschaft, München, Wien, Olzog.
- Amann, Erwin, Marin, Daliah (1989), *Barter in International Trade: A Rationale*, University of Vienna, mimeo.
- Banks, Gary (1985), "Constrained Markets, 'Surplus' Commodities and International Barter", *Kyklos*, Vol.38, Fasc.2, pp.249-267.
- Banks, Gary (1983), The Economies of Countertrade, *The World Economy*, Vol.6, No.2, June, pp. 157-182.
- Bird, Graham (1985), Balance of Payments Policy, in: Killick, Tony (ed.), *The Quest for Economic Stabilisation: the IMF and the Third World*, London, Heinemann, pp.86-127.
- Brigg, Peter (ed.) (1985), *BP statistical review of world energy*, The British Petroleum Company, London.
- Bürgin, Rolf (1986), *Countertrade - Eine theoretische und empirische Analyse aus der Sicht einer kleinen offenen Volkswirtschaft (Schweiz)*, Diss., Bern u.a., Peter Lang.
- Business International (ed.) (1986a, b), *Market Guide to Middle East Countertrade*, Vol.1 (a), Vol.2 (b), Geneva, Business International S.A.
- Cooper, Richard (1984), Why Countertrade? *Across the Board*, Vol.XXI, No.3, November, pp. 36-41.
- Cooper, Richard (1971), An Assessment of Currency Devaluation in Developing Countries, in: Ranis, Gustav (ed.), *Government and Economic Development*, New Haven and London, pp.472-513.
- Corden, W.M. (1985), *Inflation, Exchange Rates and the World Economy*, 3rd ed., Oxford, Clarendon.
- Crockett, Andrew (1981), Stabilization Policies in Developing Countries: Some Policy Considerations, *IMF Staff Papers*, Vol.28, pp. 54-79.

Debroy, Bibek (1987), Bibliography: Countertrade, *Foreign Trade Review*, Oct.- Dec., pp. 363-375.

Dixit, Avinash, Norman, Victor (1980), *Theory of International Trade*, Cambridge et al., Cambridge University Press.

Fitzgerald, Bruce (1987), Countertrade Resonsidered, *Finance & Development*, June, pp.46-49.

Frey, Bruno (1985), *Internationale Politische Ökonomie*, München, Vahlen.

Gadbaw, Michael R. (1983), The Implications of Countertrade under the General Agreement on Tariffs and Trade, *Journal of Comparative Business and Capital Market Law*, No.5, pp.355-365, 1983, Elsevier Science Publishers B.V., reprinted in: Fisher, Bart; Harte, Kathleen (eds.), *Barter in the World Economy*, New York, Westport, London, Praeger Publishers, 1985, pp.254-266.

General Agreement on Tariffs and Trade (GATT) (1986), Text of the General Agreement, Geneva, July.

Gill, Stephen; Law, David (1988), *The Global Political Economy*, New York et al., Harvester, Wheatsheaf.

Hennart, Jean-Francois (1989), The Transaction Cost Rationale for Countertrade, *Journal of Law, Economics and Organization*, Vol. 5, No. 1, pp. 127-153.

Hervey, Jack (1989), Countertrade: An Inefficient Alternative, *Economic Impact*, No. 2, pp. 30-34.

Hillman, Arye (1989), *The Political Economy of Protection*, Chur et al., Harwood Academic Publishers.

Himarios, Daniel (1989), Do Devaluations Improve the Trade Balance? The Evidence Revisited, *Economic Inquiry*, Vol. 27, No. 1, pp. 143-148.

International Monetary Fund (IMF) [1988], *Annual Report on Exchange Arrangements and Exchange Restrictions*, Washington D.C.

Khan, Mohsin., Knight, Malcolm (1982), Some Theoretical and Empirical Issues Relating to Economic Stabilization in Developing Countries, *World Development*, Vol. 10, No. 9, pp. 709-730.

Khan, Mohsin, Knight, Malcolm (1981), Stabilization Programmes in Developing Countries: A Formal Framework, *IMF Staff Papers*, Vol.28, March, pp. 1-53.

Kopinski, Thaddeus (1987), *Countertrade Policies and Practices by Selected African and Latin American Countries*, Report to the United Nations Conference on Trade and Development, mimeo, March.

Kostecki, Michel (1987), Should One Countertrade?, *Journal of World Trade Law*, Vol. 21, No. 2, pp. 7-19.

Luce, R. Duncan, Raiffa, Howard (1957), *Games and Decisions*, New York et al. John Wiley & Sons.

Maier, Gerhard (1988), Costs and Benefits of International Barter, *Intereconomics*, Vol. 23, pp. 116-120.

McVey, Thomas (1985), Policy Issues in Countertrade, in: C. F. Fisher, Bart, Hart, Kathleen (eds.), *Barter in the World Economy*, New York, Praeger Publishers, pp. 267-279.

Miramón, Jaques de (1985), Countertrade: An Illusory Solution, *The OECD Observer*, No.134, May, pp. 24-29.

Mirus, Rolf; Yeung, Bernhard (1986), Economic Incentives for Countertrade, *Journal of International Business Studies*, No. 3, pp. 27-39.

Nashashibi, Karim (1983), Abwertung in Entwicklungsländern: die schwierige Entscheidung, in: *Finanzierung und Entwicklung*, 20.Jg., No.1, March, pp. 14-17.

Roessler, Frieder (1985), Countertrade and the GATT Legal System, *Journal of World Trade Law*, Vol. 19, pp. 604-614.

Schulze, Günther G. (1989), Stating Import Prices Wrongly - Possibilities of Tax and Tariff Evasion, Konstanz, mimeo.

Schuster, Falko (1988), *Countertrade professional - Barter Offset und Switchgeschäfte im globalen Markt*, Wiesbaden, Gabler.

Sell, Friedrich L. (1988), Der Kompensationshandel, *WiST, Wirtschaftswissenschaftliches Studium*, Vol. 9, September, pp. 451-456.

Thirlwall, A.P. (1983), *Growth and Development*, 3rd ed., London, Macmillan.

Tullock, Gordon (1975), The Transitional Gains Trap, *Bell Journal of Economics*, Autumn, pp. 671-678.

United Nations Conference on Trade and Development (UNCTAD) [1986], *Trade Financing for Developing Countries: Some Aspects of Current Difficulties and Policy Responses*, Geneva, mimeo.

United Nations Conference on Trade and Development (UNCTAD) [1989], *Trade and Development Report 1989*, New York.

Verzariu, Pompiliu (1985), *Countertrade, Barter and Offsets*, New York et al., McGraw-Hill.

Walsh, James (1985), The Effect on Third Countries of Mandated Countertrade, *World Trade Law*, Vol. 19, pp. 592-603.

Welt, Leo (1985), *Countertrade*, London, Euromoney Publications.

Yoffie, David (1985), What Motivates Countertrade?, *Countertrade in the World Economy*, New York: Group of Thirty, pp. 13-24.