

THE ECONOMICS OF BARTER AND COUNTERTRADE

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Introduction

In the postwar era, the world economy was segmented into groups of developed, developing, and centrally planned economies. Many developing countries engaged in import substitution programs, and inward foreign direct investment was stifled by restrictions, or even explicitly prohibited. International trade and investment between centrally planned economies and the rest of the world were, respectively, very limited or nonexistent.

In the eighties, the world changed. First, technological progress in transportation, communication, and organization fostered scale economies in operations, increasing the need and the ability to conduct trade internationally and pursue foreign direct investment (FDI).

Second, the growth experience of trade-oriented countries effectively appeared to have changed the stance of many public policy makers. “Export promotion” replaced “import substitution”. Trade liberalization took place, in part due to the genuine acceptance of the free trade principle, and partly as disguised mercantilism.

Membership in the original GATT (and later the WTO) increased, and many of the current free trade areas are the result of the negotiations and agreements of the eighties.

Third, even the previously closed communist economies changed. After years of unsuccessful experiments in central planning, many command economies were more or less close to collapse. These economies turned to economic liberalization, which included acceptance of imports and adoption of foreign technologies. Some countries,

such as those in Eastern Europe, abandoned communism in their national politics and embraced the market system for their economy. Others, like China, while preserving their political system, experimented selectively with free(r) markets and later explicitly aimed to develop a market economy.

The outcome was heightened economic interaction, in the form of trade and direct investment, between the developed economies, newly liberalizing command economies, and some of the previously closed economies in developing countries. For many of the not yet developed economies importing and inward foreign direct investment were new experiences. They were without the institutional and market environment that characterizes the “West”, and many of them still are. Their regulatory framework was “restrictive”, and their market infrastructure was either absent or at a very basic level. As a result, their prices conveyed little economic information. Indeed, the information processing capability of these markets was very limited. Neither the infrastructure, nor the legal code to protect property rights was well developed. Because the rule of law was at an early stage of development, Western firms and local companies found the writing and subsequent enforcement of contracts a daunting task. Into this context countertrade was born. It was the outcome of early and tentative economic interactions between firms from advanced market economies and firms operating in the aforementioned environment.

Countertrade can be viewed as an awkward form of transaction. Some would describe it as in-kind exchange of goods and services, some would describe it as bundling of transactions. The literature has generally distinguished three types of countertrade:

Barter: The direct exchange of goods and services, completed nearly simultaneously.

Counterpurchase: The assumption by an exporter of a transferable obligation through a separate but linked contract to accept as full or partial payment goods and services from the importer or importing country. The contract usually stipulates a period during which the counterpurchase is to be completed, and the goods and services received in return are pre-specified, subject to availability and to changes made by the importing country. In essence, counterpurchase represents an inter-temporal exchange of goods and services or the bundling of two transactions, namely current buying and future selling.

Buyback: An agreement by an exporter of plant and equipment to take back in the future part of the output produced by these exports in full or partial payment. The distinguishing feature here is the vertical link between the current and the future exchanges. Another important difference from counterpurchase is that buybacks usually stretch over a longer period of time, possibly as long as 15-20 years.

Early work focused on drawing analysts' attention to the fact that these transactions appear to be very different from the money-based transactions prevalent in mature market economies. Initial conventional wisdom was that countertrade represented a backward and inefficient form of transaction forced upon "Western" firms by governments of developing countries that wanted to promote exports or deal with balance of payments difficulties.

Analysts, however, very quickly discovered that the complicated features typical of countertrade transactions serve important economic functions, given the environment within which these transactions take place. Their research identified the difficulties of

transacting in an environment replete with “market” inadequacies, such as lack of means to hedge risks, unreliable price signals, poor property rights protection linked to weak rule of law, and excessive regulation. Researchers began to argue that the complicated governance and transaction features of countertrade contracts provide solutions to market inadequacies. The logical basis for the functional features of these complicated countertrade agreements is found in well known economic concepts: signaling, pre-commitment, and incentive compatibility. At the outset, the ideas were advanced in the form of verbal arguments, the intended audience consisting mostly of non-technical economists. Later, the ideas were presented in more formal ways and began to appear in mainstream economic journals.

Countertrade research therefore has advanced our understanding of the relationship between efficiency and transactional governance arrangements. It also has deepened our appreciation of the usefulness of basic concepts in the economics of information and organization. This literature provides the insight that at the microeconomic level efficiency in international trade and direct investment transactions is intricately tied to contractual and governance features. In that sense countertrade research has made an important contribution to what is now an established component of organization economics.

While 25 years is a small span in the development of economic analysis, the contribution of the countertrade literature has been significant: it shows that it is vitally important how transactions are arranged! The micro-economic structure of transactions matters, and countertrade can serve to enhance efficiency. These issues, which were not addressed by the theories of comparative advantage and factor mobility, result in

substantial additional insights. It therefore seems an appropriate and opportune time to trace out the roots of this literature by assembling a collection of the key (published) papers that document its intellectual development.

Our introduction aims, as do the major divisions of the collection's contents, to review the early attempts to analyze the countertrade phenomenon, to highlight the subsequent refinements of its theoretical underpinnings, and to touch upon the managerial and policy issues raised by this literature.

The Rise, and Rejection, of Conventional Wisdom

By the mid- to late 1970s articles had begun to appear in the business and professional press that reported, and warned of, special contractual arrangements in East-West and North-South trade. The observed practices were referred to as “barter” and “countertrade”, with the terms “counterpurchase”, “compensation trade” and “buyback” denoting particular forms of countertrade.

Barter, said to derive from the old French “barater”, to cheat, in this context meant money-less, simultaneous market exchange. Countertrade was the generic term for transactions that were reciprocal in nature. It likely was the direct translation of the term “Gegengeschäft”, which was used to describe the bilateral clearing arrangements that Germany relied upon to sustain raw material imports from the Balkans during the protectionist years prior to the Second World War. These arrangements were set up between the Reichsbank and particular countries and allowed settlement of net positions

once a year. Officially these kinds of trade transactions were referred to as “Kompensationsgeschäft” or compensation trade.

Exchanges in kind are not uncommon. In developed economies exchanges in kind have been carried out for the purpose of tax avoidance, for example. Exchanges in kind are more prevalent, however, when the currency and financial markets are in disarray. When a currency is not trustworthy, people resort to exchanges denominated in a foreign currency or to exchanges in kind, like paying workers with their products. In the immediate postwar years, when financial markets were in disarray, Britain and Western Europe relied on similar clearing systems, and the emerging communist countries used their own versions of exchanges in kind among themselves and neighboring countries like Finland. Conceptually, these practices were based on the establishment of trade credit accounts among trading partners for the exchange of unrelated goods.

Countertrade transactions observed in the 1970s and 1980s were different, yet similarities remained. The partners were not necessarily familiar with each other, and the goods exchanged, on occasion, were vertically related. Characteristically, the observed practices involved companies from developed market economies in interaction with companies from command or transition economies. It was noteworthy of many such countertrade transactions that they involved two separate contracts, and used actual money.

At first glance, then, countertrade is a puzzling form of transaction: it is cumbersome to pay for goods and services with goods and services, and the arrangement reminds observers of exchanges in kind during periods of either hyperinflation or other

currency turmoil. This similarity, however, is more apparent than real. The older barter transactions were carried out in an environment where no credible fiat monies existed or where the use of foreign monies was politically unacceptable. Countertrade transactions observed in the 1970s and 1980s, however, were mediated by highly credible hard currencies. In any event, early observers were warning practitioners about the pitfalls of countertrade. An example is “Barter and Buy-Backs: Let Western Firms Beware!” (Weigand, 1980).

The conventional wisdom at the time seemed to be that, while inefficient and cumbersome, countertrade could bring benefits to developing countries, benefits such as improved terms of trade, a better trade balance, and access to credit.

The conventional wisdom was challenged by Banks (1984) and Mirus and Yeung (1987). To the best of our knowledge Banks (1983) was the first to voice disagreement with what were alleged to be policy objectives of countertrading countries. According to Banks, most centrally planned and less developed economies are too small to have a significant degree of market power. They are more likely to be price takers in world markets, and were they to have market power, they would be better off to exploit it by means of a tariff than by using the cumbersome and complex practice of countertrade, which does not generate revenue directly as a tariff would. For that reason, Banks argued, countertrade cannot be a policy to address foreign exchange shortages or credit constraints.

We hasten to add that this view can be disputed. Caves (1974) argues that for a firm from a developing country countertrade can be a means to bargain down high prices charged by a dominant firm from a developed economy. We shall return to this point in

a subsequent section. Also, for expositional convenience, we shall refer to the former firm as “East” and the latter as “West.”

Using Bank’s doubt as a point of departure, Mirus and Yeung (1987) offer a systematic analysis of the conventional wisdom in the context of commonly accepted economic identities. They argue that if countertrade is indeed a response to foreign exchange shortages, it is because it improves economic efficiency. Were it an inefficient practice, it would exacerbate the country’s shortage of hard currency. They essentially derive their argument from the identity that the current account balance is equal to savings minus investment. Another way to put the point is that the change in money demand minus the change in money supply is equal to the balance of payments and is positively associated with the change in currency strength. (Or the change in currency demand is positively associated with an economy’s income performance.) Hence, the two arguments that countertrade a) creates inefficiency and b) alleviates balance of payments deficits or currency weakness, are not compatible.

Mirus and Yeung (1987) do admit that the conventional wisdom may imply that barter can be a means to increase imports. Having incurred too much debt, a country may be forced to impose austerity measures including the curtailment of imports. Barter can then be seen as a means to by-pass austerity measures, but it will be successful only if the bartered exports escape the creditors’ attention or audit.

Hennart (1990) makes a useful contribution by taking a tally of observed countertrade practices. His paper, in addition to its informative classification of countertrade (Figure 1), adduces evidence on the relative frequency of barter, buyback and counterpurchase from transactions reported during 1983 to 1986 in “Countertrade

Outlook”, a newsletter for industry professionals. The article reveals that countertrade is essentially a practice adopted in trade among developing countries and trade between developing and developed countries. His finding validates the contention raised in our introduction, namely that countertrade is the result of the emergence of economic interactions between firms in countries with a poor institutional infrastructure and firms from advanced market economies.

Hennart (1990) also shows that the propensity to barter is indeed higher in countries with low credit ratings, whereas the propensities to, respectively, engage in buyback and counterpurchase do not correlate closely with a country’s credit-worthiness. These findings validate the contention that “credit constraint” is only a partial explanation for the emergence of countertrade.

The growth of countertrade observed in the late 1970s and early 1980s, coupled with projections from that time that this practice would soon comprise 30% of world trade, served to attract the attention of scholars. As a result a number of analytical contributions appeared by the mid-1980s.

Countertrade as a Solution to Difficulties in Transacting: New Analytical Approaches

Not surprisingly, from the outset analysts focused their attention on the economic implications of the contractual features of countertrade and the institutional environment within which it takes place. Their research draws attention to the economic meaning of

contractual arrangements and governance features in the institutional environment in which the trade and investment transactions are implemented.

Tschoegl (1985) referred to the obvious possibility that barter and counterpurchase can be means to by-pass price controls and avoid taxes, and that buyback has the property of a performance bond. Yet, since creative accounting and long term contracts could also achieve these ends, the question remained why they were not chosen. Students of the phenomenon thus began to surmise that the contractual features and the governance of countertrade might be based on a more sophisticated economic foundation and linked to the environment in which these transactions occurred.

In “Product Quality, Market Signaling and the Development of East-West Trade” Murrell (1982) hypothesizes countertrade as a “signal” of quality. “West’s” commitment to buy back goods that have been produced with the technology it transfers to “East” is a signal of the quality and reliability of its transfer. Murrell’s idea is part of the overall argument that contractual features are devised to overcome transactional difficulties stemming from information asymmetry. He anticipates Kogut’s focus on enforcement when he says: “By placing themselves in a position of mutual dependence, the two parties are signaling the reliability of their future conduct.” (p.591). His hypotheses regarding buyback as a quality signal are, by and large, corroborated by the data.

In his paper “On Designing Contracts to Guarantee Enforceability: Theory and Evidence from East-West Trade”, Kogut (1986) raises the importance of the issue of contract enforceability as a means for understanding countertrade. “West” needs

enforceability in contracts and relationship governance and can offer superior managerial and risk-shifting services. Managerial services pertain to information gathering and processing, to marketing, distribution, and the like. Risk shifting ability refers to “West” having shareholders with low risk aversion and to institutional arrangements that result in sharing or shifting of risks. Such situations call for self-enforcing contracts, that is, the contract terms are devised in such a way that it will be in the contracting party’s interest to honor the contract. For Kogut the prevalence of co-production agreements and buyback in East-West trade had a microeconomic underpinning: they are means to address bilateral hostage exposure so that the contract is incentive-compatible.

Taken together, Murrell’s emphasis of the signaling aspect and Kogut’s focus on the enforceability of contracts prepare the ground for a more comprehensive analysis of the countertrade phenomenon.

Mirus and Yeung’s “Economic Incentives for Countertrade” (1986) searches for the economic rationale for countertrade arrangements and ends up offering an encompassing analysis of the observed practices. Their rationale is that some countertrade partners, especially the “Western” firms, have access to ordinary market transactions in the global market place. To engage in a countertrade deal, the partners must each have an economic incentive to forego these ordinary economic opportunities. Like Kogut, the authors emphasize that the environment in which countertrade deals take place is often characterized by tight regulatory control/interference, lack of either private, or especially, foreign ownership rights, lack of such information as is provided by a competitive price system, and, generally underdeveloped markets. In this context,

they enumerate “transaction” difficulties and show how countertrade arrangements may alleviate these, to the extent that gains from countertrade can exceed the opportunity gains available in normal global market practices.

Mirus and Yeung (1986) divide their discussion of countertrade into examinations of contemporaneous and inter-temporal exchanges. Their analysis essentially focuses on the exchange of i) related goods and services (here technology and capital inputs linked with output) and ii) unrelated goods and services. In countertrade of unrelated goods and services, they argue that barter is a bundled transaction: “West” sells not only goods (denoted as W) to “East”, but also its marketing services to push “East’s” goods (denoted as E) onto the global market. The marketing services may include the hiring of another company to do the job. “West” is presumably more able than “East” at identifying markets and selling E (either directly or by hiring a third company to do so). The bundled transaction provides several efficiency gains. First, assigning “West” to push “East’s” goods economizes on search and transactions costs. Second, the arrangement is equivalent to making available to “West” a “commodity” hedge to reduce foreign exchange risks in its sales of W to “East.”

The bundled transaction implies an “incentive compatibility” condition. “West” fully appropriates the revenues generated from selling E. Thus, it will act in a profit-maximizing manner. The consequence is that “West” will have reason to attach the highest possible value to the “marketing services” component of a barter- or a counterpurchase deal. This will mean that “East” would have a better chance to extract a higher consumer surplus from its consumption of “West’s” goods (W). As an illustration, consider the following simple case. “East’s” surplus in the countertrade

transaction is the difference between the utility in consuming W and the cost of producing E. “West’s” surplus in the countertrade deal is the sum of the surplus in selling E (revenues less the cost in the marketing effort) minus the cost of producing W. The joint surplus is then the sum of (i) “East’s” willingness to pay for W less “West’s” cost of producing W and (ii) “West’s” surplus in selling E less “East’s” cost of producing E. As the contract induces “West” to maximize its surplus in selling E, the joint surplus of “East” and “West” increases. This makes possible that both “East” and “West” benefit.

Mirus and Yeung (1986) recognize that inter-temporal countertrade often involves the transfer of technology and sale of future output. The key insight in this second section is that these transactions normally involve information-based assets, such as skills, technology, quality, or effort. Such transactions face intrinsic difficulties that stem from information asymmetry, moral hazard, and inconsistency in the timing of decisions. Countertrade is shown to serve as a contractual resolution of these problems. In the articles to follow, many of these issues will be taken up for refinement, and so it seems appropriate to provide a listing here of those features of countertrade that represent solutions to contracting problems.

In inter-temporal countertrade, such as the delivery of a technology package in return for its output, Mirus and Yeung (1986, p.29) show that this arrangement addresses the buyer’s relative lack of knowledge about the quality and performance of technology that often tends to involve highly specialized assets (information asymmetry). By tying the supplier to the output, buyback elicits his continuous efforts to service the technology. Mirus and Yeung point out that the divergence of interests of

supplier and buyer derives from the prohibition against or high cost of foreign ownership and can be overcome by the buyback feature. Without these problems, full integration of buyer and seller would solve the transaction difficulties, the result being wholly owned foreign direct investment.

Mirus and Yeung (1986) caution that a carefully devised profit sharing contract may also deliver the same result (see also Chan and Hoy (1991)). However, given the difficulties in contract enforcement and the lack of reliable accounting information, a buyback contract may have the advantage of operational convenience. The additional advantage of buyback is that it is equivalent to a continuous forward sale that lessens the risk for the technology buyer. This idea is subsequently developed by Amann and Marin (1994).

In addition, Mirus and Yeung (1986) point out that in an ordinary sharing contract the buyer has little control over the quality of the technology transferred. In particular the technology transferred may maximize the value of the transfer package but may not satisfy the buyer's desire for more sophisticated technology. If there is a monotonic relationship between the sophistication of technology transferred and the per unit value of the resultant output, stipulating the quantity of output to be taken back as compensation for the technology transfer is shown to give the buyer influence over the type of technology transferred.

A double moral hazard arises when the output is to be used as a component in further production by the technology supplier. Fewer such deals are likely to be concluded because of the asset specificity and resulting problems. Once the plant is built and prices for the buyback have been agreed upon, a mutual hostage situation

exists. Ex post the technology supplier could try to renegotiate the price downward, and the buyer could try to do the same in the opposite direction. Buyback represents an incentive-compatible contract for both parties in this situation: both have an incentive to put forth their best efforts (Mirus and Yeung, 1986, p.33). In fact, without countertrade, there may be no market solution in this case! These notions are proposed but not formally established in Mirus and Yeung (1986). The argument is formally established in Marin and Schnitzer (1995, 1998) and Choi and Maldoom (1992).

Hennart (1989) essentially uses the arguments and economic concepts developed in Mirus and Yeung (1986), namely that countertrade is a solution for the transactional difficulties that fully integrated ownership can alleviate. He thus suggests that countertrade is a substitute for hierarchical coordination when such choice is not permitted, as Mirus and Yeung (1986) had posited. The empirical evidence he adduces indicates that countries with a high frequency of involvement in countertrade are also countries with severe FDI-restrictions.

The Literature of the Nineties: Double Moral Hazard, Hostage Exchange, and Quantity Stipulation

As the research effort continued into the nineties, the notion that countertrade arrangements solve transactional difficulties was presented in more formal models. A formal analysis of counterpurchase is found in Marin and Schnitzer ("Tying Trade Flows: A Theory of Countertrade with Evidence," 1995). They recognize that

counterpurchase is equivalent to a mutual hostage exchange capable of mitigating the double moral hazard problem described below.

Their model consists of two parties from two different environments (again, we call them “West” and “East” here) facing a double moral hazard problem. “West” exports a turnkey factory to “East;” “West’s” efforts in the turnkey transfer have a positive effect on the value of the output from the factory. But “West’s” efforts are unobservable and cannot be easily stipulated by a contract. “East” has a credit constraint and can only pay “West” for the turnkey project in the future. (As such, “West” extends a credit to “East”.) Yet, given the environment in which “East” operates, “West” cannot force “East” to pay up in the future.

A counterpurchase arrangement can solve the double moral hazard problem. The arrangement commits “East” to sell a good G to “West” in the future at a given price. It is assumed that if “East” has produced G, the contract is effective in forcing “East” to first sell it to “West.” It is further assumed that “East” can afford to produce G if “West” transfers good technology (thus increases “East’s” cash flow). The prices in the counterpurchase contract can be such that “East” will be interested to produce G when it can afford to. Note, that whenever G is produced, “West” will get it. Thus, if “East” does not pay back its loan from “West,” “West” can refuse to fully pay for G. The end result is that the mutual hostage exchange induces “West” to perform in the turnkey project and later motivates “East” to fully repay the loan it obtained from “West.”

Based on a unique data set of 230 countertrade observations they assembled from Viennese countertrade specialists and containing detailed information on each transaction as well as the specialists’ perceptions of the trade, Marin and Schnitzer’s

empirical evidence corroborates that the contract form chosen varies in accordance with the incentive to undersupply quality (as proxied by the complexity of the product exported).

In their 1998-paper “Economic Incentives and International Trade”, Marin and Schnitzer utilize the same model and data set to show how economic incentives can drive countertrade arrangements. In the face of a credit constraint “West” may be inclined to accept goods as payment for exports. These goods assume the role of collateral; hence homogeneous goods that can easily be liquidated are more desirable than differentiated goods. In countries where restrictions on FDI make efficient technology transfer a particular concern, countertrade can help elicit effort by both parties, especially if differentiated consumer goods have to be marketed by “West” in return for the exported technology. In Marin and Schnitzer’s sample the more severely credit-constrained LDC importers indeed supplied relatively more homogeneous products in “payment”, while importers from the East, facing less of a credit constraint but more severe restrictions on foreign ownership, offered differentiated consumer and investment goods in their deals. These findings therefore corroborate the hypothesis that the nature of the underlying transactional issue, be it credit-worthiness or efficiency of technology transfer, dictates the type of arrangement agreed upon.

Chan and Hoy (“East-West Joint Ventures and Buy-back Contracts,” 1991) focus on buybacks. They model the case where output is a function of inputs from a multinational corporation (MNC) and a host country enterprise (HCE) in a socialist environment. The authors implicitly assume that the quality of the inputs is not easily verifiable so that there is a double moral hazard problem. The first best outcome is one

where HCE and MNC supply the “quality” that maximizes the joint profits of HCE and MNC. The first best is presumably the outcome under fully integrated ownership. The authors show that under a sharing rule both sides still do not fully appropriate the returns to their effort and so will under-supply their quality inputs. The authors further argue that a minimum quality standard requirement (in exchange for monetary compensation) may lead to an outcome closer to the first best outcome than under the sharing rule. In addition, they show that if one side supplies more than one input, then combining a sharing rule and a “minimum quality requirement” may generate a joint profit that is higher than under a pure sharing rule and under a pure minimum quality requirement rule.

Strictly speaking, the “combined minimum quality requirement and sharing rule” does not exactly resemble buyback arrangements. Moreover, one may question the logic that assumes “quality” as unobservable and at the same time a “minimum quality requirement” as enforceable. Still, Chan and Hoy contribute to the idea that contractual features in joint ventures between “East” and “West” have important efficiency-enhancing functions. In particular, given that full integration is prohibited, using sharing rules may not be sufficient to fully alleviate transactional difficulties.

Choi and Maldoom’s “A simple model of buybacks” (1992) presupposes the absence of any legally enforceable mechanism for contracts conditional on the quality of an input or an output. While output quality may be observable, it is not contractible in their model. They consider two alternatives: (i) a pre-specified division of output between selling in “East’s” and “West’s” market, and (ii) a market allocation mechanism. Under the market allocation mechanism, a middleman observes the quality

of the output and allocates output optimally between “East’s” and “West’s” markets. In both alternatives, “East” and “West” share the sum of the revenues from selling in the two markets. The authors show that pre-specified quantity division in selling to “East’s” and “West’s” market can be superior to the market allocation mechanism. Again, the contractual arrangement in alternative (i) is not very similar to buyback contracts we are familiar with. However, the authors contribute to an important idea: for a quantity split the decline in revenue is greater, given the same drop in effort, than for the market-allocated division of output. Thus, quantity stipulation can elicit effort. Essentially, this is the idea Mirus and Yeung (1986) similarly proposed when they argued that quantity buyback (sending a fixed output quantity from “East” to “West” as compensation for “West’s” original input) elicits “West’s” contribution of quality in the technology transfer.

Risk Sharing and Risk Shifting

Earlier commentators also suggest that countertrade is motivated by the lack of means to hedge currency and price risks in general (e.g., Kogut (1986) and Mirus and Yeung (1986).) Amann and Marin (“Risk Sharing in International Trade: An Analysis of Countertrade”, 1994) argue that countertrade is a form of risk sharing between “West” and “East”. They assume the absence of futures markets. Relying on a straightforward two-parameter (risk and return) utility function, they show that it is rational for “East” to sell its product forward via counterpurchase; indeed, risk sharing is a Nash bargaining solution and can be Pareto optimal when no other means of reducing risk are available.

They tacitly assume that “West’s” good exhibits no price volatility. Hence, they imply, as Kogut (1986) has argued, that “West” has better risk reduction capability, with the result that the risk sharing is evidenced by “West’s” forward purchases of some of “East’s” output.

Countertrade as Hidden Price Discrimination

Countertrade could also be motivated by attempts at price discrimination. This issue is raised by Caves ("The Economics of Reciprocity: Theory and Evidence on Bilateral Trading Arrangements", 1974). Having observed barter and a variety of other reciprocal agreements, some of them involving shopping lists as in counterpurchase, Caves hypothesizes that these practices might represent price discrimination in action. He cites as indirect evidence for this the complaints about re-sales by some of the less developed country exporters. As well, the lower terms of trade offered by less developed countries to centrally planned economies might reflect attempts by the former to correct for overvalued exchange rates. Thus Caves proposes that bilateral arrangements, such as barter and counterpurchase, may also represent price discrimination as a competitive tool "...to offset inefficient trade interferences or to cheat on collusive prices" (p. 39).

Other efforts that focus on countertrade as a device to practice price discrimination are those of Caves and Marin (1992) and Magenheim and Murrell (1988). In “Countertrade Transactions: Theory and Evidence” Caves and Marin follow up on price discrimination as a motivation for countertrade. “West” exports a heterogeneous good and possesses some market power. “East” uses countertrade as a means to extract

back some of “West’s” rent. Caves and Marin then adduce empirical evidence that the implicit price in countertrade reflects the bargaining power of the two trading partners. Their work, though, begs two questions: can “East” extract back some of “West’s” monopoly rent via other means? And why is countertrade chosen over these other means?

Magenheim and Murrell (“How to Haggle and to Stay Firm: Barter as Hidden Price Discrimination”, 1988) pursue two firms, each with market power, which can use each other’s output as an input in their production process. Open price discrimination can lead to haggling and hence loss of future market power. Thus there is an attraction to hiding discounts. As net prices in barter cannot easily be observed, the undesirable consequences of open price discrimination can be avoided, yet its benefits can be reaped. One implication of this finding is that since the necessary double coincidence of wants is rare, barter exchanges can be expected to develop in order to facilitate the practice.

Policy Implications

The above literature referred to the policy impact of countertrade only by implication. The analytical literature we have reviewed so far implies that countertrade is efficiency creating. It is perhaps needless to point out that caution is warranted. A series of papers by Abdel-Latif and Nugent (1994 and 1993) provides theoretical and empirical insights regarding barter and counterpurchase programs practiced during the 1980s by Egypt.

In “Barter Trade in Egypt: Trade Creation or Rent-seeking?” (1994) Abdel-Latif and Nugent emphasize that countertrade may create trade but it may also have trade distortion effects. Consider that there are tariffs and other trade barriers. “East” conducts countertrade with “West”, and the deal allows “West” exclusive access to “East’s” home country market. It also allows “East” to bypass tariffs and trade barriers in “West’s” home market. The result is trade creation that allows “East’s” country to gain consumer surplus. Also, there will be a transfer of wealth from other firms in “East’s” country and foregone tariff revenue will accrue to “East” itself. There is, however, trade diversion if partner “West” is not the most efficient supplier. Inasmuch as more efficient firms are likely to have better market opportunities, this cautionary note is particularly appropriate: such firms are more inclined to reject requests for countertrade because their opportunity costs of engaging in it are higher.

If trade barriers are based on high transactions cost, and if countertrade indeed reduces transactions costs, the gain to the country is more likely to be positive. The authors articulate a series of complicated cost and benefit considerations, assessing the effects of an Egyptian company's countertrade with Japan's NEC, a firm that is unlikely to be the lowest cost supplier. They find that the program benefited the Egyptian company, but that it yielded disappointingly low realized barter exports compared to the level planned for. Moreover, the exports were obtained at significant costs in terms of the implied exchange rate subsidy. Factors that may have contributed to the low ratio of realized to planned deals are the lengthy approval process, a bias in favor of large requests, the concurrent decline of Eastern Europe, general trade liberalization elsewhere, and the absence of data on private transactions.

Abdel-Latif and Nugent's "Countertrade, Licensing And Direct Foreign Investment: Comparative Effects on LDC's and MNE's" (1993) also applies partial equilibrium analysis to compare direct investment, licensing and licensing coupled with countertrade from the perspective of "East" and "West". Based on consumer surplus and producer profit, buyback emerges as a possible bargaining solution when direct investment is ruled out, whereas counterpurchase proves inferior to even simple licensing due to the extra costs of disposing the goods.

Another policy suggestion is that social welfare can be improved by government-mandated countertrade. Ellingsen and Stole (1996) point to this as a possibility in circumstances where foreign buyers value domestic goods highly and the direct cost of mandating the practice is low. Their starting point can be interpreted to be that international trade is not frictionless due to the existence of information barriers. Information asymmetry between buyers and sellers leaves extractable surpluses. The intuition underlying their argument is that mandated countertrade allows domestic firms to extract more consumer's surplus in their international transactions, similar to the idea of countertrade as a means to practice price discrimination. Mandated countertrade, however, clearly has a strategic aspect when the frictions it causes are not overwhelming. Ellingsen and Stole's work therefore gives credence to the early conventional wisdom, which had led to complaints about the practice by Western firms.

Managerial Implications

Obviously, the key contribution of the economics of barter and countertrade, namely that the way in which transactions are arranged is vitally important for their success, has significant implications for managers. Surprisingly, there are relatively few scholarly papers that directly address the managerial dimension, at least in comparison to the number of sophisticated analytical and empirical contributions just described.

Neale, Shipley and Sercu (1992) survey countertrade practices within the national markets of Canada and the UK. “Motives for and the Management of Countertrade in Domestic Markets” sheds light on the perceptions of participants and points to implications of the practice of countertrade for a firm’s marketing strategy and planning. Reactive versus proactive strategies, effective organization of countertrade, negotiating team composition, as well as effective evaluation and control mechanisms are some of the issues this paper alerts readers to. Survey respondents also corroborate that hidden price reductions and short-term credit problems are major motives for domestic countertrade.

Mirus and Yeung (1989) approach the managerial dimension from the point of view of a Western firm engaging in the export of capital equipment to an emerging economy. “Buy-back and Technology Transfer” uses a stylized case study to motivate the derivation of a number of hypotheses that formalize what had been reported by management, namely that the buyback agreement helped speed up negotiations by avoiding delays from foreign exchange approvals, that the plant design was better adapted to accommodate the quality of local feed-stocks, and that some of the best employees were sent for assembly, supervision and start-up training. The managerial benefits of buyback as a monitoring device and as a signal of quality are thus

reemphasized. The major contribution of the paper lies in the conjectures it presents on the managerial implications, based on the analytical foundations of countertrade.

While the literature focusing on the managerial implications could be considered somewhat sparse, it is not obvious that this is a serious shortcoming, because the analytical literature discussed previously has already advanced the notion of countertrade as an efficiency enhancing governance arrangement that is optimal under the circumstances.

Barter in a Domestic Setting

In recent years, the high volume of barter observed in Russia's domestic trade has rekindled analysts' interest. Several arguments have been made in attempt to explain the use of barter in international transactions. Ritter (1995) focuses on barter as a way of transacting when paper money has not been credibly established. By contrast, Williamson and Wright (1994) show that, in the presence of private information, barter can lead to an equilibrium in which only low quality goods are produced. The introduction of fiat money expands the range of trading strategies and options. Moving from barter to reliance on fiat money thus promotes production and exchange and enables agents to choose strategies that increase the probability of acquiring high-quality output. These analytical strands therefore contribute additional insights regarding the benefits of using money. Yet another focus of this literature is on the functions served by barter, which include evading taxes, exercising price discrimination/market power, and dealing with poor financial intermediation. While these latter ideas were already

included in the literature reviewed earlier, they are now resurfacing in more elegant models, if still in working paper form (for example, Guriev and Kvasov, 2000).

Barter and Countertrade: Conclusion and Prospects

The foregoing overview of the literature on barter and countertrade has shown an evolution in the description of the phenomenon from early explanations and critical analysis of same, to rigorous and formal hypotheses and their empirical verification. More than two and a half decades have elapsed since its initial study, and the fact that the range and formal complexity have increased significantly during this time, makes it appropriate for us to summarize now what has been contributed and learned.

The first important lesson is that the relationship between countertrade and such alleged policy objectives as addressing currency shortages is somewhat tenuous. A more useful approach appears to be the study of the economic motivations for countertrade.

Mirus and Yeung (1993) attempt to take stock of the analytical results regarding the “policy motives” and “transactions costs” motives for countertrade. They do not favor the alleged policy motives emphasized by earlier commentators. Synthesizing the transactions cost motive deriving from difficulties in dealing with “information asymmetry” and “opportunistic behavior”, they reiterate that countertrade represents bundled transactions that are devised to mitigate these problems.

Restructuring, privatization, liberalization and development of markets in East and South may therefore reduce the frequency of countertrade. Reduced ownership

restrictions are likely to shift organizational forms toward wholly owned production facilities and joint ventures. Improved knowledge, experience, and legal enforcement of contractual obligations will likely mean an increasing prevalence of longer term and more sophisticated transaction contracts. Bundling should become less necessary in such a transformed environment.

However, bundled transactions as a way of dealing with information asymmetry, moral hazard problems, opportunistic behavior, hedging needs, and other transaction difficulties are unlikely to disappear. While such problems are usually resolved by ownership integration and long-term contracts, there are situations where ownership is not desirable and where integration will cause diseconomies in management and other agency costs. When transactions are so complicated that monitoring and enforcement become costly, explicit contracting may be prohibitively difficult. Under such circumstances a bundled transaction might still be a viable solution.

Transaction cost economics (for example, Williamson, 1979) has shown that focusing on the transaction as the basic unit of analysis is a fruitful approach. In accordance with that approach and other advances in organizational economics, the contributions reviewed here have successfully identified and explicated differences that characterize alternative modes of governance.

By working out the microeconomic logic of its organizational form, the economics of barter and countertrade has arrived as an integral part of organization economics. Moreover, the literature illustrates that appropriately designed transactional governance is crucial for the efficiency of international economic interactions at the micro level.

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