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Return Policies and Coordination of Supply Chain

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1. Introduction

In many industries, manufacturers rely upon independent retailers to distribute their products as manufacturers can benefit from retailers' reputations, economies of scale, and knowledge about local markets. However, manufacturers and retailers being independent agents act in their own best interest. A supply chain composed of independent agents acting in their own best interests will generally not achieve system-wide efficiency, often due to some incongruence between incentives faced locally and the global optimization problem, a phenomenon known in the economics literature as "double marginalization". (Spengler 1950, Tirole 1988).

To efficiently use the supply chain one needs some mechanisms to coordinate supply chain to maximize total channel profit. Coordination of the supply chain implies that the profit of the supply chain is maximized, hence achieving system-wide efficiency. One way to coordinate channel decisions is by using a returns policy provided by the manufacturer.

This paper is organized as follows. Section 2 presents an overview of the benefits and costs of returns policies. Section 3 reviews the different kinds of returns policies that are required to coordinate the supply chain for the different types of products. Section 4 discusses how returns policies will be affected by demand uncertainty and Section 5 studies the impact that demand uncertainty together with retailing competition has on returns policies. Section 6 provides a conclusion of the paper.

2. Overview of return policies

A returns policy for excess inventory is a commitment made by a manufacturer, or distributor upstream when accepting products from a downstream channel member. The most generous policy promises to refund the full wholesale price for all returned products, while less generous policies offer credits against future orders. A partial returns policy gives only partial credits or refunds. (Padmanabhan & Png 1995)

The format of returns policies varies in and across industries. Manufacturers and distributors across a wide range of products have long allowed retailers to return excess inventory. Today, returns policies are common in the distribution of books, magazines and newspapers, recorded music, computer hardware and software, greeting cards and pharmaceuticals. (Padmanabhan & Png 1995)

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2.1 Benefits of returns policies

At the most superficial level, returns policies will encourage retailers to carry larger stocks. From the manufacturer's standpoint, the more retailers sell, the higher the manufacturer's profit will be. Returns policies are thus beneficial to both the manufacturers and retailers. Below is a discussion of the benefits to the retailers.

2.1.1 Mitigate retailers' risk

Uncertain product demand is the reason for retailers' reluctance to carry more stock as they fear having excess inventory. By stocking conservatively, retailers limit the manufacturer's potential sales. The manufacturers can mitigate the retailers' risk of having excess inventory by offering returns policies which will encourage the retailers to stock more products and hence increase the sales of the manufacturers. (Padmanabhan & Png 1995)

2.1.2 Safeguard the brand

The institution of returns policies will discourage retailers from marking down the price of the product when it is nearing the expiration date and selling of stale products. Returns policies are a more attractive way of dealing with expiring products and will help to safeguard the manufacturer's brand. (Padmanabhan & Png 1995)

2.1.3 Support end-user returns policy

The institution of return policies will be beneficial to retailers as it allows them to return products to the manufacturers when they are pressured to accept returns from their own customers. End users want to be able to return products to retailers to safeguard against the risk that the product will not satisfy them. (Padmanabhan & Png 1995)

2.1.4 Facilitate distribution of new product information

Returns policies may aid information transmission between manufacturers and retailers more effectively. A manufacturer that is sure its products will sell well can afford to offer a generous returns policy, knowing that retailers will not return the items as explained by Chu (1993). Hence a returns policy is one way a new manufacturer can credibly signal information about expected market demand and product quality. (Padmanabhan & Png 1995)

Since returns policies also place the consequence of product failure on the manufacturers, the incentives of the manufacturers and retailers are thus aligned. As a result, a returns policy is also a way the manufacturer can commit to investments in advertising, promotion and other activities to enhance product sales. (Padmanabhan & Png 1995)

Returns policies also serve as forms of assurance to the retailers that a manufacturer will not bring out new products so quickly that the retailers' stock will be obsolete. If the manufacturer does so, retailers can return the superseded items, hence punishing the manufacturer. (Padmanabhan & Png 1995)

2.1.5 Structure competition

A returns policy strengthens a manufacturer's position relative to other competing brands as it reduces the cost of carrying excess inventory and tilts the balance in the retailers' mind towards carrying larger stocks of the manufacturer's product. As a result, the probability of a stock-out and of consumers switching to competing brands will be lower. Hence the

institution of returns policies has strategic implications for manufacturer's profits by having an impact on competition among retailers and brands. (Padmanabhan & Png 1995)

2.2 Costs of returns policies

When some of the additional stocks are returned, a returns policy generates additional costs for the manufacturer which will be discussed below.

2.2.1 Logistics costs

One of the costs incurred by a returns policy is the logistic costs of organizing, packing, and shipping of products back and forth. Depreciation cost is another cost that the manufacturer incurred on returned items. Returned items depreciate as they may be damaged in shipment, decay physically or lose their marketability over time. (Padmanabhan & Png 1995)

2.2.2 Demand uncertainty

The demand for products such as new books, CDs, software and pharmaceuticals is uncertain. Since a returns policy transfers the cost of excess stocks from retailers to the manufacturer, the more uncertain demand is, the greater the cost of a returns policy to the manufacturer. (Padmanabhan & Png 1995)

2.2.3 Retailer incentives

By reducing the risk of losses due to excess inventory, a returns policy lessens some of the retailer's incentive to invest in efforts to promote retail sales by merchandising, doing point-of-sale advertising and providing attractive shelf space. (Padmanabhan & Png 1995) Hence, when manufacturer accepts the risk from the retailer, the retailer's incentive to invest in promotional efforts may be dulled and this is a cost to the manufacturer.

2.3 Implementation of returns policies

The partial returns policy which rebates only part of the wholesale price for return items is most widely implemented to address the retailers' incentive to overstock and avoid point-of-sale marketing efforts. In this way, the manufacturer and the retailer share the risk, hence providing some incentives for all parties to play their part. Partial risk gives the manufacturer an incentive to support the product and to select new introductions carefully while partial risk gives retailers the incentive to order conservatively and promote the product. Ultimately, the aim of the partial returns policy is to coordinate the supply chain to maximize total channel profit.

Some other kinds of partial returns policy are those with a time limit for returns as well as those which take into consideration a retailer's returns history into decisions on pricing, credit and even on whether to continue dealing with the retailer.

A time-consuming and expensive way for a manufacturer to devise returns policies for a mix of retailers that differ in risk aversion, competitiveness and skepticism is to tailor a returns policy for each retailer. Another way is to design a menu of alternative returns policies such as more generous returns policies with higher wholesale prices or strict limits on returns with lower wholesale prices and allow every retailer to choose among the options. (Padmanabhan & Png 1995)

3. Types of products

This section will investigate the different kinds of returns policies that are required to coordinate the supply chain for the different types of products, namely perishable commodities, style goods, catalogue style goods, experience goods, Internet sales and build-to-order products.

3.1 Perishable commodities

Perishable commodities are short life-cycle items with limited shelf or demand life such as newspapers, baked goods, periodicals and records.

An earlier investigation of employing a returns policy for perishable commodities to coordinate the distribution channel appeared in Pasternack (1985) where two extreme cases under the assumption of risk-neutral supply chain members are analyzed. It is impossible to achieve channel coordination if the manufacturer allows the retailer full credit for all unsold perishable goods or no returns for any unsold perishable goods.

On the other hand, if the manufacturer offers retailers full credit for a partial return of goods this may achieve channel coordination in a single-retailer environment. Since the optimal return allowance will be a function of retailer demand, such a returns policy cannot be optimal in a multi-retailer environment. In contrast, he shows that a returns policy in which a manufacturer offers a partial credit for all unsold goods can achieve channel coordination in a multi-retailer environment.

3.2 Style goods

Style goods are characterized by highly uncertain demand, long production lead time and have little or no salvage value at the end of their short selling seasons of a few weeks or months. They include products such as computer software, hardware, compact discs, fashion items, greeting cards, books and pharmaceuticals.

Mantrala and Raman (1999) study how the supplier's wholesale-buyback price policy influence the retailer's optimal order quantity decision with different levels of demand variability as well as study how demand uncertainty the profitability of both the suppliers and retailers. With demand variability remaining constant, supplier can induce the retailer to purchase more stock by increasing the buyback price and/or reducing the wholesale price.

When demand uncertainty increases, the supplier tends to drop his optimal buyback price even though the buyer is ready to increase her order quantity at any given wholesale price. This indicates that the supplier finds that his expected costs of returns at the higher buyback price are too high relative to his expected revenues. In addition, at any given wholesale price level, the retailer's total profits as well as the total system profits fall as demand variability increases.

On the other hand, at a very low wholesale price, the supplier does not find it optimal to accept returns at all and hence his optimal buyback price is zero. However, the buyer is still willing to order larger amount of stocks at higher levels of uncertainty even without a buyback price offer provided the wholesale price is sufficiently low. Hence, increasing demand uncertainty works completely in favor of the supplier in this situation and thereby improves his expected profits.

However, at the higher wholesale price, the supplier has to offer a large buyback price which significantly increases his expected costs of returns from the retailer, and thereby lowers his expected profits as demand uncertainty increases.

Finally, the supplier makes his largest profits at high wholesale prices accompanied by high buyback prices. With the right combination he can make the retailer purchase as much style goods as possible at a much lower wholesale price and no buyback price.

3.2.1 Catalogue style goods

Catalogue refers to a particular kind of style goods in which a retailer advertises an item at a particular price in a catalogue that is distributed to customers. Since cost considerations prohibit the frequent distribution of catalogues, the retailer must commit to a single price for an item for the entire selling season.

With a price-dependent demand model, Emmons and Gilbert (1998) show that under demand uncertainty, a supplier using a returns policy for catalogue style goods to repurchase excess stock from the retailer at the conclusion of the period can improve the profits if demand follows a uniform distribution. They also find that there exists at least a wholesale price where returns policy is a 'win-win' strategy for retailer and supplier. The offer to buy back excess stock tends to increase the total combined profits of the retailer and manufacturer; hence it is not a zero-sum game. A manufacturer can "buy" the loyalty of a retailer relatively cheaply by decreasing the wholesale price by a small amount. It is always in the retailer's interest to have the manufacturer buy back unsold items at the end of the season, and the manufacturer also benefits from such arrangements when wholesale prices are sufficiently large. However, when the manufacturer sets his wholesale price optimally, he gains more from the offer of a returns policy than does the retailer.

3.3 Experience goods

Experience goods are goods for which idiosyncratic valuations such as buyer's remorse are possible only after purchase. This is because customers do not fully know their preferences for the products at the time of purchase, but after they gain some experience with them.

Returns policies for experience goods allow customers to defer their purchasing decisions until after gaining some experience with the products. A consumer who has learned that he does not like a product can cancel his purchase by simply returning it. These returns policies do not require customers to provide evidence or an explanation regarding the malfunction of the returned good. Instead, a customer not liking a product is often a sufficient reason for stores to accept the return. The "no-questions-asked" full refund policy is customary with many big retailers.

According to Che (1996), returns policies for experience goods insure consumers against ex post loss, which allow a monopoly seller to charge a higher price. This is because under the returns policy, consumers can return the good after learning their valuations, at zero cost. However, the seller cannot induce consumers to buy at a price above their ex post valuations with a no-returns policy. This is because under the no-returns policy, consumers bear the entire risk associated with their uncertain ex post valuation. As risk aversion increases, the seller must lower her price to compensate consumers for the risk.

Che (1996) also demonstrates that the returns policy is optimal if the consumers are sufficiently risk averse. This is because the returns policy eliminates a consumer's risk of paying more than his ex post valuation; hence the marginal consumer is not adversely affected by risk aversion. He also shows that returns policy is optimal if the retail costs are high. When the retail costs are high, the screening opportunity of the returns policy: seller can charge a high price and sell only to high-valuation consumers is relatively more

valuable since the seller can maintain her profit margin by selling only to high-valuation consumers. Furthermore, superior risk sharing makes consumers strictly better off under the returns policy as the consumers are protected from any loss and so they receive strictly positive expected utility. However, the seller's failure to internalize this benefit leads to too little adoption of the returns policy in equilibrium.

3.4 Internet sales

The e-business revolution in recent time has brought an alternative model for the part of the supply chain from the manufacturer to the customer. More and more manufacturers are now attempting to sell directly to the customers bypassing the traditional distributor-wholesaler-retailer chain. Their motivation for this is to reduce the distribution cost and be more responsive to customers' requirements.

Customers also view Internet purchase as advantageous because it drastically reduces the search cost and is convenient due to the fact that the store is open 24 hours per day seven days a week. In an Internet direct sales supply chain, the customers buy direct from the manufacturer, hence sacrificing the benefits of physical inspection of the product. This increases the probability that the customers will be dissatisfied with the product and likely to return it. Hence, a common customer's concern is the lack of a proper returns policy for internet purchase and the complicated logistics for returning an item. As such, a clearly explained and generous returns policy will be welcomed by the customers and therefore will enhance demand.

From the manufacturer's point of view, a generous returns policy will increase customers' confidence and hence increase sales revenue by inducing more customers to buy. On the other hand, returns policies would increase the cost of business substantially due to increased likelihood of return. Hence, returns policy constitutes a tradeoff and an optimum policy would be one whereby the resultant profit would be maximized. (Mukhopadhyay and Setoputro 2004) The returns policy practice in e-business varies across industries and stores, and may range from unconditional money back guarantee to store credit only to no refund.

Mukhopadhyay and Setoputro (2004) find out that in a market where customers are less price-sensitive, the e-tailer can offer a more generous returns policy and at the same time will be able to charge higher price. Optimum pricing and returns policies will generate higher demand for the product but the e-tailer will also see higher return quantity. Overall, profit can be maintained at a higher level because the extra revenue from charging higher price and from increased sales outweighs the increase in cost due to increase in return quantity.

In addition, they also find out that in a market where customer's demand is increasingly more sensitive to the returns policy, the optimum price will increase and the e-tailer can offer more generous returns policy to increase sales. Although offering more generous returns policy will also increase return quantity, the e-tailer's profit will not be reduced. This is because when customer is more sensitive to returns policy, e-tailer can charge higher price to offset the cost increase due to offering more generous returns policy.

Results from the paper also show that when the customer is less sensitive to the rate of return parameter, offering generous or restrictive returns policy will not make much difference. Hence, the e-tailer can offer more generous returns policy without affecting profit level. This can be observed in the arts industry where the customers are less sensitive to the rate of return parameter and so sellers generally offer more generous returns policy. On the other hand, when customer is sensitive to the rate of return parameter, e-tailer tends

to offer more restrictive returns policy because e-tailer is afraid that customers may abuse their returns policy. This can be seen in the electronic and apparel industries where the customers are widely known as sensitive to the rate of return parameter and so sellers often impose less generous returns policy on their customers.

3.5 Build-to-order products

A build-to-order product (BTO) is essentially built to customize the product to the requirement of the customers, hence increasing both lead time and cost of production. Firms are generally reluctant to offer a returns policy because the returned merchandise is practically useless as it was designed to meet the requirement of a particular customer. Hence returns policy will not be suitable in case of a BTO product with almost zero salvage value.

Mukhopadhyay and Setoputro (2005) propose the concept of modularity in the institution of returns policies for BTO products. When a BTO product with modular design is returned, the product can be dismantled very easily producing a number of components which are standard products keeping their full value. This returned product will give back a large salvage value to the firm, thereby cutting down its loss due to the return. Hence, the company will incur a lower cost of return from the returned product when the level of modularity is higher.

They also demonstrate that in the market where customer demand is more sensitive to the returns policy, the seller will offer more generous returns policy and simultaneously the optimum modularity level shall be increased. This is because since the BTO product is customized, offering a generous returns policy without increasing the modularity level will increase the cost of returning.

In addition, in the market where the demand is increasingly more sensitive to the modularity level, the optimum modularity level will increase and the seller shall simultaneously offer more generous returns policy. Moreover, when the seller can decrease their product development and design costs, the optimum modularity level will increase and at the same time the firm can offer more generous returns policy. Furthermore, when the seller can salvage more from the returned product, the optimal returns policy and the optimum modularity level offered will increase. Generous returns policy is favorable when the retailer can obtain high salvage value for returned merchandise.

4. Demand uncertainty

This section will discuss how return policies will be affected by demand uncertainty. Manufacturers whose products are subject to uncertain demand face a problem of inducing distributors to stock those products. A manufacturer may attempt to compensate its distributors by agreeing to accept returns of unsold goods for full or partial refunds of their purchase price.

4.1 Nature of demand uncertainty

Marvel and Peck (1995) show that the manufacturer's decision to accept returns depends crucially on the nature of demand uncertainty. Two cases of demand uncertainty are discussed in their paper. Valuation uncertainty occurs when firms are unsure about the willingness of customers to pay for the manufacturer's product while arrival uncertainty occurs when firms do not know how many customers will arrive. When uncertainty applies

only to the valuation that consumers place on the manufacturer's product, but not to arrival uncertainty, returns policies distort pricing without offsetting the inventory efforts. Prices are forced up while the expected quantity sold remains low and hence returns policies are not employed in the case of valuation uncertainty. On the other hand, if the manufacturer and retailer have a good idea about the amount consumers will be willing to pay for the product, but do not know how many consumers will arrive at the marketplace, a high return allowance is attractive to the manufacturer.

In addition, the authors demonstrate that when arrival uncertainty is small relative to valuation uncertainty, the manufacturer chooses not to permit returns. However, increases in the arrival uncertainty parameter result in the institution of returns policies and the ratio of the returns to wholesale price rises rapidly with arrival uncertainty.

Marvel and Peck (1995) also point out that return allowances are far more widespread in Japan than in United States. The fragmented nature of Japanese distribution into smaller units as compared to those in the West is a consequence of legal obstacles to construction of large stores. Distributing sales over a larger number of outlets will increase the arrival uncertainty at each individual outlet relative to the sales at that outlet. However, valuation uncertainty is unlikely to be affected at any individual outlet. As a result, the liberal return policies of Japanese manufacturers are a profit-maximizing adaptation to the fragmented nature of Japanese distribution.

4.2 Multi-store retailer

Mantrala and Raman (1999) study the impact of demand uncertainty on supplier's returns policies for a multi-store style-good retailer. In their research the retailer, assumed to be a central department store, had two different retail outlets whose demand may or not have been correlated and the retail outlets are not in competition. For any given non-optimal wholesale price and returns value, they numerically study how demand variability affected suppliers' and retailers' profits and return credits. At any given wholesale price, the supplier tends to drop his optimal buyback price as demand uncertainty increases even though the buyer is ready to increase her order quantity. On the other hand, at a very low wholesale price, the supplier in fact does not find it optimal to offer to accept returns at all; hence his optimal buyback price is zero. However, the supplier makes his largest profits at high wholesale prices accompanied by high buyback prices.

4.3 Multi-item returns policy

Brown, Chou and Tang (2008) study a multi-item returns policy called "pooled" (or joint) returns policy under which the distributor can return any combination of the products up to R percent of the total purchases across all products. They analyze the distributor's optimal profit and order quantity under the pooled returns policy, and compare these operating characteristics to the case when a single-item "non-pooled" returns policy is instituted. Under the non-pooled returns policy, the distributor can only return on individual items using item-specific return limits.

Under the non-pooled policy, the distributor can return each product separately up to R percent of the purchase of that product. They show that the distributor will always achieve a higher profit under the pooled policy. They also show that the manufacturer could actually obtain a lower profit under the pooled policy due to a counter-intuitive result: the distributor may order less under the pooled policy even though the pooled policy offers more flexibility. This counter-intuitive result motivates them to determine the conditions under which the distributor would order less under the pooled policy. Finally, they develop

a heuristic for determining the distributor's optimal order quantities associated with the n-product case under the pooled policy.

5. Demand uncertainty with retail competition

The papers by Marvel and Peck (1995) and Mantrala and Raman (1999) only consider the effect of demand uncertainty on returns policies. In this section, we will study the impact that demand uncertainty together with retailing competition have on returns policies.

Padmanabhan and Png (1997) point out that when retailing is competitive but demand is certain, a returns policy intensifies retail competition and reduces the retailer margins, hence benefiting the manufacturer. On the other hand, when retailing is a monopoly while demand is uncertain, a returns policy helps the manufacturer by intensifying retail distribution, but hurts by encouraging excessive stocking. They also demonstrate that when there are both competing retailers and demand is uncertain; there is a trade-off between benefits of more intense retail competition and the costs of excessive stocking of a returns policy. As a result, the manufacturer shall adopt a returns policy if the marginal production cost and the demand uncertainty are sufficiently low. The lower the marginal cost and demand uncertainty, the greater will be the benefit from more intensive retail competition and the smaller will be the manufacturer's loss from excessive stocking. Since the marginal costs of production of books, CDs and computer software are small in comparison to their price, returns policies are common in the distribution of books, recorded music and software. In addition, Yao, Wu and Lai (2005) study how demand variability and retailer's competition interacts with manufacturers' return prices in influencing retailer decisions on order size and retail price, and the implications for manufacturers' policies and profitability of the parties in the supply chain.

They point out that a returns policy always benefits the manufacturer. If the demand uncertainty and wholesale price are very high, the best decision of manufacturer is to provide either a return credit or full returns policy. However, channel profits, and particularly the expected profits of the retailers, may not fare well under this policy. If the manufacturer provides a lower wholesale price, the optimal decision of the manufacturer is not to provide any returns credit.

They also demonstrate that the competing power of the retailer has an impact on the distribution channel members' decisions. Intensifying the competition between two duopoly competing retailers will lead to a decline in both the retailers' and the channel expected profits. In contrast, supplier's expected profits are increasing as the supplier's wholesale price increases with his setting the optimal returns price under all scenarios. The supplier's action of setting high wholesale price leads to a high equilibrium retail price that in turn leads to a decline in market demand, thus resulting in a decrease in the retailers' expected profits. Hence, although a returns policy can induce the retailer to order more so that the supplier's profits and channel profits improve, the retailer's expected profits are destroyed significantly. Furthermore, increasing the demand uncertainty works completely in favor of the supplier in this situation. On the other hand, in the higher uncertain demand situation, the retailers should adopt a risk-averse policy so that they can share more total profits.

Furthermore, they find out that the price sensitivity factor has a significant impact on the returns policy. With low price sensitivity, the manufacturer does not generally adopt a returns policy, particularly in low demand uncertainty. In contrast, with high price sensitivity, the manufacturer will like to adopt a returns policy to improve his profits. However, the returns policy requires the support of the high wholesale price, which leads to the severe cannibalization of the retailers' profits.

6. Conclusion

We have come to the concluding section of this literature review. A returns policy provided by the manufacturer can coordinate the supply chain to maximize total channel profit. Any manufacturer may find that the benefits and costs of a returns policy pull in different directions and whether a manufacturer should accept returns depends on the balance between the benefits and costs.

We have also looked at the different kinds of returns policies that are required to coordinate the supply chain for the different types of products, namely perishable commodities, style goods, catalogue style goods, experience goods, Internet sales and build-to-order products. In addition, we also study the impact of these return policies on the optimal pricing of the manufacturer and optimal order quantity decision of the retailer.

We also discuss the impact that demand uncertainty alone have on return policies and extend our study to include the impact of both demand uncertainty and retailing competition on returns policies.

7. References

- Brown, A., Chou, M.C., Tang, C.S., 2008. The Implications of Pooled Returns Policies. *International Journal of Production Economics*, 111, 129-146.
- Che, Y.-K., 1996. Customer Return Policies for Experience Goods. *Journal of Industrial Economics*, 44, 17-24.
- Chu, W., 1993. Demand Signaling and Screening in Channels of Distribution. *Marketing Science*, 11, 327-347.
- Emmons, H., Gilbert, S.M., 1998. Note: The Role of Returns Policies in Pricing and Inventory Decisions for Catalogue Goods. *Management Science*, 44 (2), 276-283.
- Lai, K.K., Wu, Y., Yao, Z., 2005. Demand uncertainty and manufacturer returns policies for style-good retailing competition. *Production Planning & Control*, 16(7), 691-700.
- Mantrala, M.K., Raman, K., 1999. Demand uncertainty and supplier's returns policies for a multi-store style-good retailer. *European Journal of Operational Research*, 115, 270-284.
- Marvel, H.P., Peck, J., 1995. Demand Uncertainty and Returns Policies. *International Economic Review*, 36(3), 691-714.
- Mukhopadhyay, S.K., Setoputro, R., 2004. Reverse logistics in e-business optimal price and return policy. *International Journal of Physical Distribution & Logistics Management*, 34(1), 70-88.
- Mukhopadhyay, S.K., Setoputro, R., 2005. Optimal return policy and modular design for build-to-order products. *Journal of Operations Management*, 23, 496-506.
- Padmanabhan, V., Png, I.P.L., 1995. Returns policies: Make money by making good. *Sloan Management Review*, Fall, 65-72.
- Padmanabhan, V., Png, I.P.L., 1997. Manufacturer's Returns Policies and Retail Competition. *Marketing Science*, 16 (1), 81-94.
- Pasternack, B.A., 1985. Optimal Pricing and Return Policies for Perishable Commodities. *Marketing Science*, 4(2), 166-176.
- Spengler, J. J. 1950. Vertical restraints and antitrust policy. *J. Political Economics*, 58, 347-352.
- Tirole, J. 1988. *The Theory of Industrial Organization*. MIT Press, Cambridge, MA.



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With the ever-increasing levels of volatility in demand and more and more turbulent market conditions, there is a growing acceptance that individual businesses can no longer compete as stand-alone entities but rather as supply chains. Supply chain management (SCM) has been both an emergent field of practice and an academic domain to help firms satisfy customer needs more responsively with improved quality, reduction cost and higher flexibility. This book discusses some of the latest development and findings addressing a number of key areas of aspect of supply chain management, including the application and development ICT and the RFID technique in SCM, SCM modeling and control, and number of emerging trends and issues.

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