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Who Coordinates Automotive Steel Sheet in Japan?

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Akira Tanaka (Kyoto University)

Masahiko Isomura (Nagoya City University)





Abstract

- We aim to describe distribution of auto-motive steel sheet/ plate in Japan, from the view of transaction cost economics (TCE)/ neo-institutional economics (NIE)
- Focus on wholesalers' (trading companies') role in 'tied sales'
- In some cases wholesalers coordinates the distribution indeed, and in some other cases they intermediate for non-transactional reasons



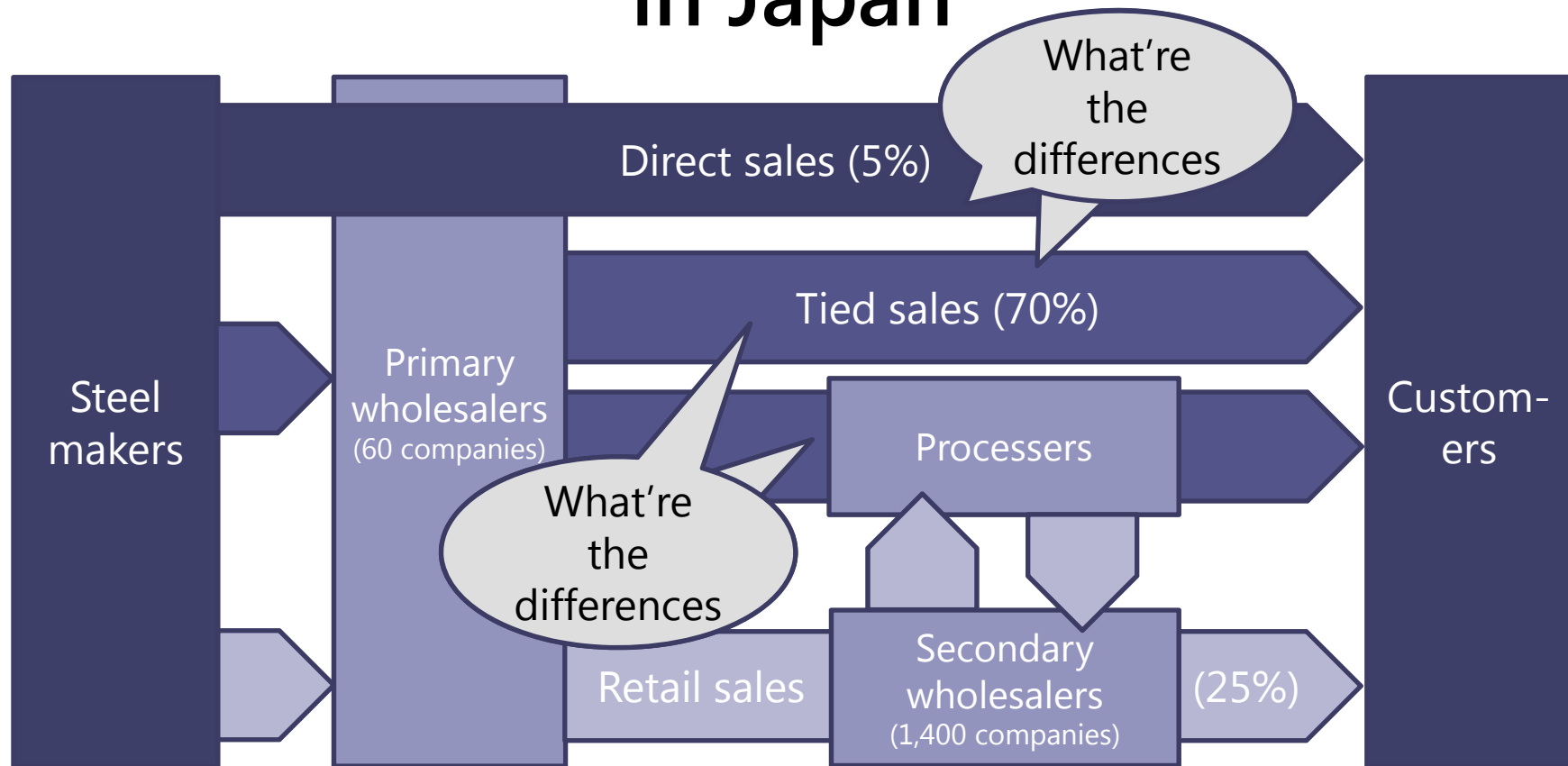
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1. An Overview: Distribution of Automotive Steel Sheet



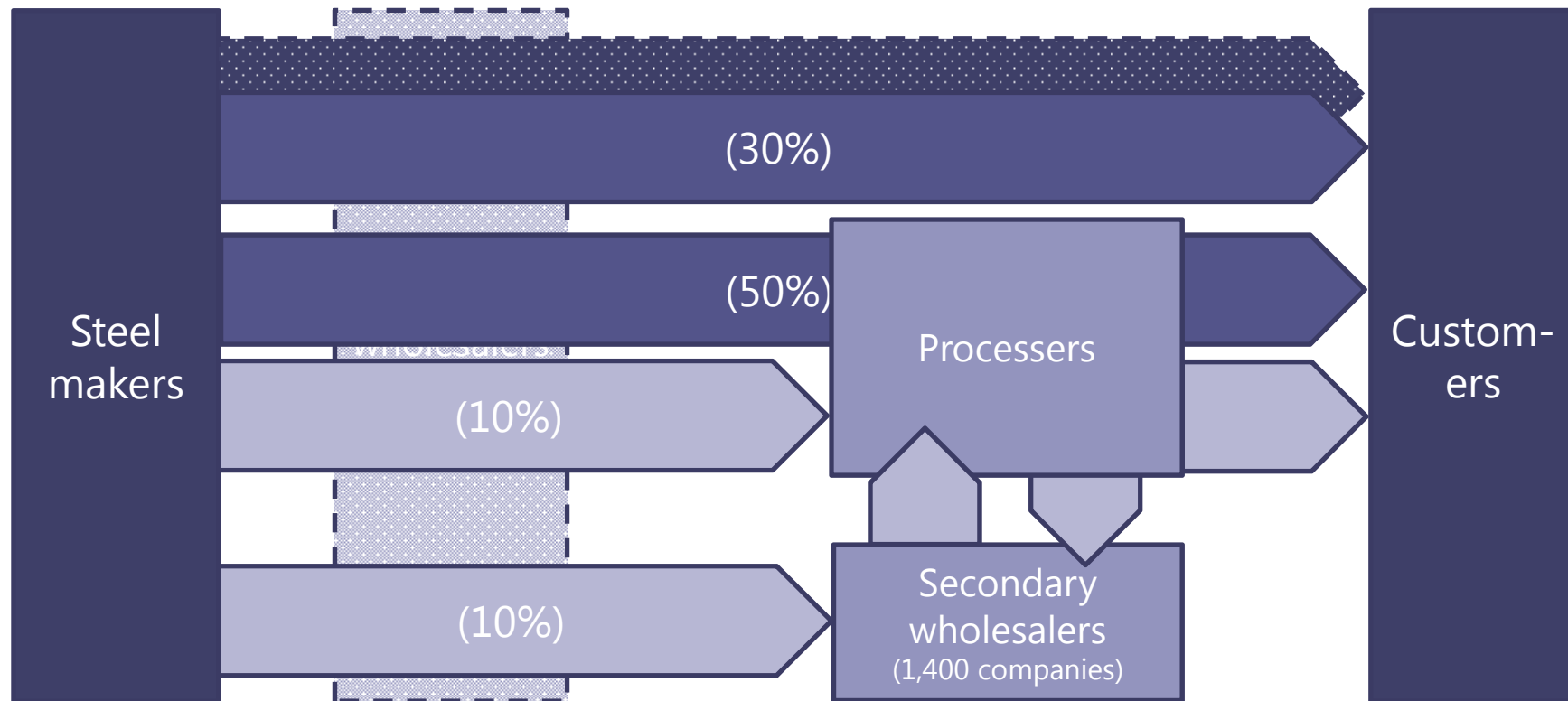


Distribution Route of Steel Products in Japan





Physical Distribution Route of Steel Sheets in Japan



Source: Metal One (2010), 63. (%) shows proportions of physical flow.



Research Question: Why tied sales, not direct sales, is the main route?

- Steel maker (seller) and auto maker (buyer) determine the conditions of transaction (spec, price, quantity, terms of delivery)
- Rolled steel coils are mostly transported from steel mill to auto plant directly
- And wholesalers take **commissions** on this trade.
→ **What role actually they are playing?**
 - Cf. In US, customer-specified steel sheets are usually distributed in direct sales (without any intermediaries)



Possible reasons: Why not direct sales?

- 1. Wholesalers is playing somewhat economic functions in those transactions:
 - Adjusting supply and demand
 - Financing by commercial credit
 - Carrying out complex business as sellers' agent
- 2. The other possibilities



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2. Wholesaler's Core/Sub Core Functions: Within the Transaction





The core function: Adjustment of supply and demand 1/3

- In the case of tied sales, wholesalers sound to take no risk
 - Cf. In the case of retail sales, wholesalers transact on their own account. – no wonder there
- But it depends on the detail of conditions



The core function: Adjustment of supply and demand 2/3

- Steel makers require the order **three month prior** ('future contracts')
 - to make optimal production schedule with economic lots of each specified/customized steel product
- Japanese auto makers tend to behave more 'postponed.' → Wholesalers should order for auto makers on their own risks to bridge over **the gap between the two industries**



The core function: Adjustment of supply and demand 3/3

- Toyota, with their fine forecast capability and flexible production system, sends notification three months advance. → Only slight gap remains, and wholesaler's role become small in this case
 - Just for Toyota's own use, except for its auto parts suppliers' use
- It can be said that the adjustment tend to be:
 - **easier when** SCM progress highly
 - **more difficult when** complexity of transaction increase



Sub core functions

- **Financing:**
 - It must be essential in the case of sales to small and medium customers which are not stable financially
 - Is that true about major auto makers as well? - Doubtful
- **Business practice outsourcing:**
 - Metal One (2011) stands for this reason
 - It must be true, but looks too small reason to explain



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3. Wholesaler's Fringe Functions: Within the Transaction





Other possible reason 1: Fringe functions

- Wholesalers' functions that connect the transaction indirectly
 - 1) **Information**: To share information among the whole members of supply chain
 - 2) **Relation specific skills** (in the other operations):
 - To steel makers – retail sales, import of raw materials, export of steel products, etc.
 - To auto makers – supply other materials or machinery, assistance in overseas business, **coordination of CPS distributions**, etc.



What is CPS?

– Centralized Purchasing System

- CPS
 - The practice auto maker manage procurement some material not for its own (in-house) use, but also for its OEM manufactures and parts suppliers
 - E.g. Toyota's CPS is said to triple the volume compared to its in-house use (different by auto maker)
 - Aims to:
 - ensure to purchase customized item of steel sheet products for product liabilities
 - represent the whole network's demand to discount at the price negotiation



Coordination of CPS distribution

- Toyota's production-scheduling is layered
 - Quantity of each model is fixed earlier, then quantities of each steel sheet product for the outer panel of **auto body** is fixed at the same time
 - Production-schedule including the details of a lot of **options** is fixed much later
- As a result, parts suppliers' demand is fixed much later and fluctuate more than Toyota's in-house demand
- → Toyota Tsusho, affiliate wholesaler of Toyota, coordinates Toyota's CPS steel sheet distribution
 - E.g. putting together the demands of common kind of coil



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4. Historical Background





Other possible reason 2: Path dependence

- Tied sales historically derived from designated wholesaler system (DWS) and a series of wartime regulations
 - DWS appeared to cover the lack of Japanese steel maker's marketing capabilities. And steel makers must keep it
 - Steel makers have been so strong to make their customers to accept DWS



The Elements of 'tied sales' institution

(Forme

1911, Annual contracting between Yawata Steel Works and Japanese Army/Navy

- Future contracts

1903, Yawata designated 4 wholesalers

- Designated wholesaler system

- Commissions (included in steel prices)

- Ex go down

1937, Steel Industry Law

- Direct negotiation with customer

– 'Champion negotiation' (shipbuilding plate, automotive sheet)

1960, Open Selling System

- 'Centralized purchasing system' (CPS)

1939 Toyota began with Kojima Industries etc.
1976 Toyota reintroduced with Gifu Autobody, Arakawa Shatai etc.



Wholesaling is being (quasi-)internalized

Table: Auto makers' purchase of steel sheet products (FY2012)

auto maker steel maker	Toyota	Nissan	Honda	Mazda				
Nippon Steel	Toyota Tsusho	79	Nissan Trading	25 (direct)*	3	Marubeni Itochu	20	
	Nippon Steel Trading	13	Mitsui & Co	7	Honda Trading	10	Metal One	2
	Mitsui & Co	13	Isuzu Corp	7	Mitsui & Co	10		
	Metal One	12	Marubeni Itochu	5	Metal One	10		
	Marubeni Itochu	5	Nippon Steel Trading	1				
	Okaya & Co	5	Sumitomo Corp	<1				
	others	1						
JFE Steel	Toyota Tsusho	81	JFE Trading	9 (direct)	6	JFE Trading	9	
	JFE Trading	19	Marubeni Itochu	7	Honda Trading	7		
	Marubeni Itochu	5	Nissan Trading	5	JFE Trading	7		
Sumitomo Metal	Sumitomo Corp	28 (direct)	<1 (direct)	7 (direct)		Sumitomo Corp	18	
	Sumikin Bussan	14	Sumitomo Corp	<1				
	Toyota Tsusho	6	Nissan Trading	<1				
	others	3						
subtotal	(direct)	3	(direct)	<1	(direct)	16	(direct)	3
	Toyota Tsusho	191	Nissan Trading	31	Honda Trading	17		
	steel maker's subs.	46	steel maker's subs.	10	steel maker's subs.	7	steel maker's subs.	9
	independents	83	independents	29	independents	20	independents	42
Total		320		70		60		55

Source: Calculated from Steel Information Service (2013).

Notes: Sheets and plates purchased monthly average of Oct. 2012-Mar. 2013 (metric ton). Including CPS.



Other possible reason 2': Auto maker's strategy

- Now, major auto makers are stronger than steel makers. → It comes to depend on auto maker's strategy more and more
 - **Direct sales** (purchase): complete internalization
 - **Affiliate wholesaler channel**: quasi-internalization
- Honda tends direct purchasing and Honda Trading channel
- Toyota tends Toyota Tsusho channel, on the other hand, remains diverse wholesaler channels



Conclusion

- In tied sales, main route of automotive steel sheet distribution in Japan, wholesalers play significant role
- Possible reasons of that:
 - The core function; Adjustment:
 - Fringe functions; Information, relation specific skills (especially, coordination of CPS distribution)
 - Ex-transaction reasons: Path dependence, auto maker's strategic decision



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