ASSIGNMENT II

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1 ANALYSIS

1.1 Introduction

Asset specificity in the truck driving industry can be divided into employment specificity, truck specificity and haul specificity.

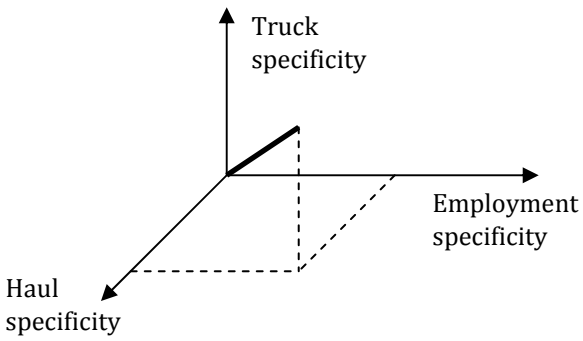

Diagram 1: Relationship between the three kinds of asset specificity in the truck driving industry.

The drivers are an asset for the company in the sense of human resource and cannot be paid by hour for incentive reasons but typically per mileage or percentage of revenue instead. High employment specificity means a high wage for the employee which is consistent with owner-operators who are assumed to be the cheapest and tend to drive general purpose trucks (Nickerson/Silverman, p. 94). The truck is a classical asset appearing on the balance sheet. The haul is an intangible service. Employment, truck and haul can be general but as each of it becomes specific, they influence one another. A specific haul demands a specific employment mode and a specific truck. A specific truck will usually not be used for unspecific hauls. And because a specific truck requires more capacities from the driver, the employment or wage will also tend to look differ-

ent. The division of asset specificity in the three areas is also consistent with the three predictions of Nickerson and Silverman (Nickerson/Silverman, p. 97). All three specificities are interrelated. They can be connected through a framework of truck driving which is a chain of shipper, carrier, company driver or owner-operator, and receiver at the end.

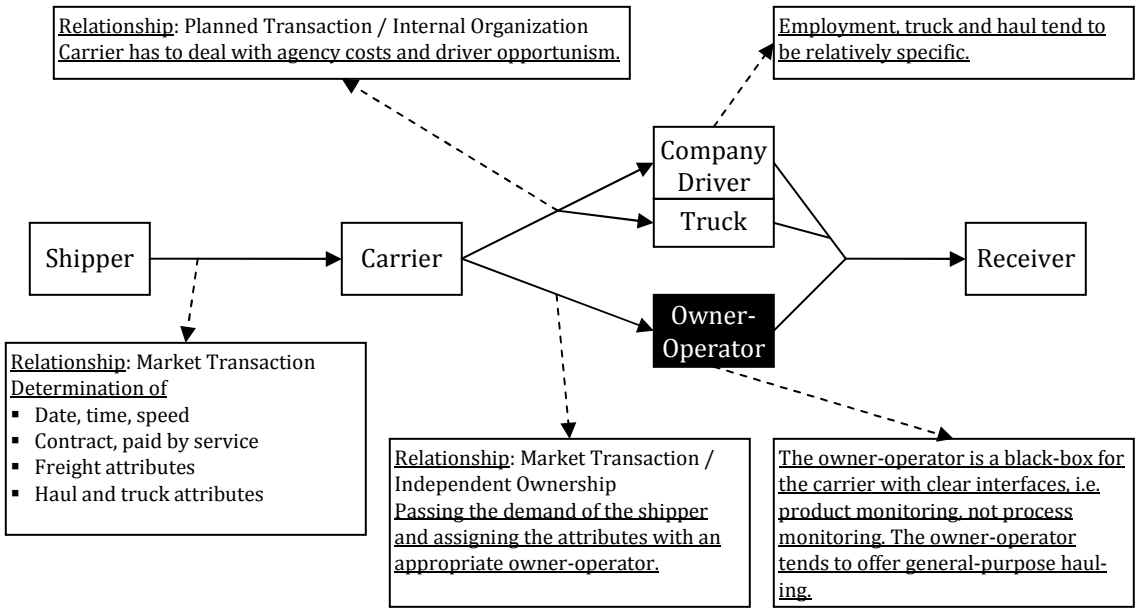

Diagram 2: The framework of truck driving is a chain.

1.2 Nickerson and Silverman

The working paper of Nickerson and Silverman on asset ownership in the trucking industry has to be seen very critical. Although two of their three predictions seem quite plausible, the scientific value of the empirical analysis is low. Their data is based on some considerations by some industry experts (Nickerson/Silverman, p. 98). The authors themselves raise several times concerns about their interpretations due to their

statistical data (Nickerson/Silverman, p. 98 / 99 / 102 / 103 / 115 / 116). Although their honesty is appreciable, the pseudo coefficients of determination of their models are only less or equal than 0.331 whereas a value of 1 would be a perfect match to reality and values of 0.7 and more can be meaningful. The first and third prediction of Nickerson and Silverman (Nickerson/Silverman, p. 97) are basically the same and logic: the more specific trucks and hauls, the higher the risk and the more company-drivers will be dominant. However, the second prediction is too weak and not sufficiently supported by the empirical data: of course, the reputation is important to carriers and company-drivers are more dependent. But owner-operators also care about their reputation. Optimal carrier management and good reputation are substitutes and the carriers are of course rent-seeking and cost-minimizing.

1.3 Employment Specificity

The carriers act as entrepreneurial broker between drivers and shippers (Lafontaine/Masten, p. 12). The dominant employment mode for drivers in interstate for-hire trucking is direct company employment and not owner-operation (Nickerson/Silverman, p. 91). Hybrid cases between those two modes are not efficient (Nickerson/Silverman, p. 96) and in reality no more than a "legal fiction" (Baker/Hubbard, p. 6). The employment specificity of drivers can be analyzed in four different ways.

1.3.1 Transaction Cost

The transaction cost approach basically says, the more specific the truck, i.e. the higher the asset specificity, the higher the transaction cost. A carrier can better afford to oper-

ate specific trucks and deal with their higher risk of downtime and higher transaction costs because specialized trucks tend only to be a fraction of his generalized fleet.

1.3.2 Agency Theory

The agency theory can give another part of the answer to the employment question which appears as two-sided moral hazard issue (Nickerson/Silverman, p. 94): There are principal (company) and agent (driver) with different incentives and externalities like certain demands and restrictions of the environment. The agent in general wants to maximize well-being through an optimal choice between rent-seeking and leisure maximization (Baker/Hubbard, p. 3). Once the rent is fixed for a certain period, the agent then wants to maximize his leisure. The principal in return is always driven by the market, focused on rent-seeking, and achieves this through optimal behavior. Subject of the agency approach is the following: How does the carrier make sure that the driver operates in a rent-seeking way as much as possible? The central problem is information asymmetry caused by the difficulty in process monitoring.

Whereas the carrier can perfectly monitor the outcome of the haul, the trucker is a “last cowboy” (Lafontaine/Masten, p. 8) who is less dependent (Baker/Hubbard, p. 5). An owner-operator is typically more careful with the truck than a company driver (Nickerson/Silverman, p. 94). As Larry Summer noted: No one has ever washed a rental car. The carriers cannot monitor their drivers directly (Nickerson/Silverman, p. 94). However, Baker/Hubbard analyze two years before the paper of Lafontaine/Masten and even three years before the Paper of Nickerson/Silverman the use of on-board computers which actually allow sufficient process monitoring of the driver. Their result

gives evidence that technology caused increases in contractibility tend to cause less independent contracting. In other words, on-board computer increase the rate of company drivers. Owner-operators can monitor themselves directly and are consequently assumed to drive optimally already (Baker/Hubbard, p. 11).

1.3.3 Contractibility

The contracting approach is an advancement of the agency approach and in fact more practical in order to describe the relationship between driver and carrier. Baker and Hubbard analyze the impact of on-board computers. They argue that with increasing application of information technology, more data becomes available and more attributes can be fixed in contracts. The higher the contractibility, the higher the rate of vertical integration (Baker/Hubbard, p. 25). So the asset ownership is directly influenced by the degree of contractibility (Baker/Hubbard, p. II). Owner-operators internalize most externalities (Baker/Hubbard, p. 4) so that the carrier does not care about process monitoring in this case. But the more the externalities increase, the less likely is the internalization of the owner-operator and the more profitable it becomes for the carrier to employ company-drivers (Nickerson/Silverman, p. 95). Monitoring and ownership are substitutes (Baker/Hubbard, p. 3). As a result, drivers of non-specific trucks on non-specific hauls should be owner-operators (Baker/Hubbard, p. 10). Nickerson and Silverman argue the other way round and more superficial: owner-operators typically own general TL (truck-load) trucks so that carriers tend to employ more company drivers the more LTL (lower-than-truckload) hauls need to be performed (Nickerson/Silverman, p. 97).

1.3.4 Human Specificity

Lafontaine and Masten provide a deeper approach and claim that asset ownership is a matter of the owner (Lafontaine/Masten, p. 1). Unless the truck is inherited, a driver will decide about ownership depending on his level of risk aversion, experience, capital endowment, mentality and education (Lafontaine/Masten, p. 35). So the mode of ownership can be described as consequence of personal life circumstances rather than as consequence of asset specificity.

1.4 Truck Specificity

If a driver decides for the ownership he is probably not going to buy a specific truck. Specificity generally means that this type of truck is less available (Lafontaine/Masten, p. 5). It is likely to cause higher operating costs and is therefore less attractive.

1.5 Haul Specificity

Carriers tend to operate a relatively high fraction of LTL (less-than-truckload) purpose trucks (Nickerson/Silverman, p. 103) and integrate their drivers (Nickerson/Silverman, p. 116) because of the higher transaction costs. Hauls can be differentiated by their length, freight weight and TL (truck-load) or LTL mode (Nickerson/Silverman, p. 95 / 101 ff.). Owner-operators tend to serve long hauls with their general purpose trucks whereas company drivers tend to serve a higher amount of short and medium, that is more specialized, hauls (Baker/Hubbard, p. 11 and Nickerson/Silverman, p. 95 ff.). Hauls also differ in productivity because drivers prefer a

higher average speed (Lafontaine/Masten, p. 14) and have to rest for 8 hours after 10 hours of driving in the U.S..

1.6 Summary

Nickerson and Silverman suggest that transaction cost and agency theory in relation with asset specificity provide the answer. The asset specificity approach states, the more specific the truck and haul, the higher the value and the tied risk of the service. Baker and Hubbard go further and see also a problem of contractibility. The agency theory argues that owner-operators are the best and cheapest drivers because they are more rent-seeking than company-drivers. The former mainly monitor themselves whereas the latter have to be monitored by their boss. On-board computer can diminish the effect of this difference since they offer a sufficient tool for process monitoring and contractibility of rent-seeking driving. Lafontaine and Masten in return state that asset specificity and marginal incentive concerns are wrong explanations. Their answer is the specificity of the driver himself. The human approach describes the circumstances which lead to a certain employment specificity.

The asset specificity theory only allows predicting tendencies whereas the other explanations are much stronger. Certainly, there is no ultimate explanation and the most accurate model is probably a hybrid consisting of parts of all theories. However, the human specificity approach is the most profound since all the other ones are based on it: trucks are stupid and don't care about their specificity, neither do hauls or contracts.

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