

The Dual Network Structure of Franchising Firms: Property Rights, Resource Scarcity and Transaction Cost Explanations*

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Abstract. This paper formulates and tests various hypotheses from various theories regarding the dual network structure of franchising firms. First, by applying the property rights theory we argue that the contractual mix between company-owned and franchised outlets depends on the distribution of intangible assets between the franchisor and franchisee. The more important the franchisor's system-specific assets relative to the franchisee's local market assets for the generation of residual income, the more ownership rights should be transferred to him, and the higher is the percentage of company-owned outlets. Second, we compare these results with the resource scarcity and transaction cost view. According to the resource scarcity view, the proportion of company-owned outlets varies negatively with the franchisor's restraints in financial, informational and management resources. In addition, transaction cost theory states that the franchisee's specific investments (as bonding mechanism) mitigate the hold-up risk for the franchisor resulting in a lower degree of vertical integration. These hypotheses are tested by using data from the Austrian franchise sector. The empirical results are generally supportive of the property rights hypothesis. In addition, the informational restraint hypothesis is compatible with the property rights hypothesis regarding the influence of franchisee's local market know-how advantage on the percentage of company-owned outlets. On the other hand, the financial restraint and transaction cost hypotheses are not supported by our data.

Keywords: Dual Structure; Intangible Assets, Residual Income; Property Rights, Resource Scarcity, Transaction Costs

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1 Introduction

One of the main characteristics of franchising firms is the dual ownership structure (Lafontaine & Shaw 2001; Lewin-Solomon 1999, Bradach 1997; Dahlstrom & Nygaard 2000; Cliquet 2001; Penard et al. 2002). Under a property rights view the mix of franchisor-owned and franchised outlets improves the organizational efficiency by combining intangible system-specific assets and local market assets to generate the residual income stream. The franchisee's intangible assets refer to outlet-specific knowledge and capabilities that generates residual income, and the franchisor's intangible assets refer to the system-specific know-how and brand name assets. Since investments in these assets cannot be specified in the contract, asset ownership critically influences the residual income stream of the network (Hart & Moore 1990; Hart 1995; Windsperger 2002b). According to the property rights approach, the allocation of residual income rights should encourage investments in system-specific and local market assets to create a large residual income stream. If the system-specific assets are very important for the generation of residual income relative to the local market assets, the franchisor's investment incentive is critical for the success of the network, and hence more residual income rights are transferred to the franchisor by a higher proportion of company-owned outlets. Consequently, under a strong know-how position of the franchisor he intends to control the network by relatively more company-owned outlets compared with a situation in which local market assets are critical for the creation of residual income.

The present article focuses on a property rights explanation of the relationship between company-owned and franchised outlets. Based on the property rights approach, we derive the dual structure hypothesis that the mix between company-owned and franchised outlets depends on the distribution of intangible assets between the franchisor and the franchisee. The higher the franchisor's portion of intangible assets relative to the franchisee's, the more ownership rights should be allocated to the franchisor, and the higher is the proportion of company-owned outlets. This hypothesis is tested in the Austrian franchise sector. As suggested by our data, noncontractible system-specific and local market assets influence the contractual mix between company-owned and franchised outlets. Finally, we compare our results with the resource scarcity and transaction cost view. According to the resource scarcity view, the proportion of company-owned outlets varies negatively with the franchisor's restraints in financial and informational resources. In addition, transaction cost theory states that the franchisee's specific investments (as bonding mechanism) mitigate the hold-up risk for the franchisor resulting in a lower degree of vertical integration. The empirical result about the informational restraint hypothesis is compatible with the property rights hypothesis regarding the influence of franchisee's local market know-how advantage on the percentage of company-owned outlets. On the other hand, our data do not support the financial restraint and transaction cost hypotheses.

Our main contribution to the franchising literature is to apply the property rights theory to explain the dual network structure of the franchising firm. Contrary to the existing literature, we argue that the mix between company-owned and franchised outlets depends not only on the brand name assets of the franchisor – as argue by Azevedo & Silva 2001, Penard et al. 2002 and Lafontaine & Shaw 2001 – but also on the importance of intangible local market assets of the franchisee for the creation of residual income.

The paper is organized as follows: Section two presents a literature review. Section three develops a property rights view of the allocation of residual income rights in franchising. In section four we derive the dual structure hypothesis that the mix of franchised and company-owned outlets depends on the distribution of the intangible assets between the franchisor and the franchisee. Finally we test the hypothesis in the Austrian franchise sector.

2 Literature Review

The coexistence of franchised and company-owned outlets was examined from different perspectives. Starting from the ownership redirection hypothesis in marketing (Oxenfelt & Kelly 1968-69; Dant et al. 1996), an increase of the proportion of company-owned outlets was predicted during the organizational life cycle because scarcity of franchisor's resources (managerial and financial resources and local market knowledge) declines in later stages of the cycle. According to this resource scarcity view, the mix of franchised and company-owned outlets arises because it allows firms to get access to scarce financial, managerial and information resources (Norton 1988; Minkler 1990; Thompson 1994). In the 1980s and 1990s agency-theoretical and transaction cost explanations were developed (Klein 1980, 1995; Williamson 1985; Brickley & Dark 1987; Brickley et al. 1991; Dnes 1992; Lafontaine 1992; Berkovitz 1999). According to these theories the decision between company ownership and franchising depends on the individual characteristics of the outlets (Lafontaine & Shaw 2001). The agency theory offers the following explanation: Under low monitoring costs company-owned outlets as low-powered incentive mechanism are more efficient than franchised outlets. When the monitoring costs rise due to local market uncertainty and opportunism, franchised outlets are more efficient due to their high-powered incentive effects. In addition, Gallini and Lutz (1992) developed a signalling model. At the beginning of the franchise business company-owned outlets signal high quality to potential franchisees and a commitment to protect the value of the brand name assets. When the value of the brand name is established that signals quality, company-ownership is less required resulting in a higher proportion of franchised outlets. Conversely, the transaction cost explanation is based on the assumption that differences in asset specificity, frequency and uncertainty may explain the ownership of the individual outlets. Primarily the influence of transaction specificity on the tendency toward vertical integration by company-owned outlets was investigated. Due to the hostage effect of the outlet-specific investments, the franchisor's opportunism risk is reduced resulting in a lower proportion of company-owned outlets. More recently Lewin-Solomon (1999) explained the dual structure as a governance mechanism to promote innovations in the network. In addition, Bai & Tao (2000) presented a multi-task model of the existence of franchised and company-owned outlets. Moreover, Bradach (1997), Cliquet (2001), Sorenson & Sorenson (2000) and Michael (2000) proposed the plural form hypothesis. Bradach, Cliquet and Sorenson & Sorenson argue that the dual structure is the result of synergistic

effects between franchised and company-owned outlets. According to this strategic view, franchised outlets are more efficient at the ‘exploration’ and company-owned outlet at the ‘exploitation’ of the profit potential of the network (Sorenson & Sorensen 2000). Further, due to the complementarities between franchised and company-owned outlets the organizational capability and hence the rent-generating capacity of the dual structure is higher than under the pure franchised or company-owned forms. Recently, Michael (2000) presented the tapered integration hypothesis. Tapered integration raises the bargaining power of the franchisor by improving the franchisor’s local market information and by signalling to franchisees that the franchisor is committed to quality. This result is compatible with the synergistic view of the plural form.

Although these approaches and hypotheses offer explanations of different aspects of the ownership structure of franchising firms, the following deficits exists: *First*, the agency and transaction cost theory cannot explain the dual network structure under homogenous outlet characteristics. In addition, in a strictly methodological sense, the agency theory cannot explain the allocation of ownership rights as residual rights of control, due to the complete contracting assumption (Hart 1995; Masten 2000; Brousseau & Glachant 2003; Hart 2002; Hendrikse 2003). Under the property rights approach this assumption is critical for the explanation of asset ownership. As Baker and Hubbard (Baker & Hubbard 2001, 2002, 2003) argued, increasing the contractibility of assets may explain changes in the ownership structure. Furthermore, Whinston (2000, 2001) criticized the asset specificity theory developed by Williamson (1979) and Klein et. al (1978), because it does not differentiate between the various types of specificity that matter for integration decisions - for instance between contractible and noncontractible specific assets. *Second*, with the exception of the resource scarcity hypothesis, these theories do not take into account the influence of local market assets upon the optimal mix between franchised and company-owned outlets.

Starting from these theoretical deficits, the objective of this paper is to develop a property rights approach of the dual network structure. Contrary to the resource scarcity view, our approach differentiates between intangible and tangible resources. Only intangible resources can explain the ownership structure. In addition, compared to the agency and transaction cost theory, it does not require the assumption of heterogeneous outlet characteristics. Given the same outlet characteristics, our approach may explain the dual network structure by differences in organizational capabilities (as intangible assets) between the franchisor and franchisee.

3 The Allocation of Ownership Rights in Franchising Firms

According to the property rights approach, the structure of ownership rights depends on the distribution of intangible assets that generate the firm’s residual surplus (Barzel 1997; Hart, Moore 1990; Hart 1995; Brynjolfsson 1994). In

franchising intangible knowledge assets refer to the brand name and system-specific assets of the franchisor and the local market assets (know-how) of the franchisee. Based on the property rights view, the allocation of residual income rights should encourage investments in system-specific and local market assets to create a large residual income stream. The more important the franchisor's intangible assets are for the creation of residual income relative to the franchisee, the higher is the franchisor's portion of ownership rights. The franchisor's residual income rights consist of two components: Fees and company-owned outlets.

(I) Initial fees are the remuneration for the system-specific know-how transferred to the franchisee at the beginning of the contract period. The higher the franchisor's intangible system-specific assets at the beginning of the contract period, the higher are the rents generated by his system-specific know-how, and the higher are the initial fees. In addition, the more important the franchisor's system-specific investments relative to the franchisees's intangible investments during the contract period, the higher is the fraction of residual income created by him, and the higher should be the royalties (Rubin 1978; Brickley & Dark 1987; Lutz 1995). Conversely, the more important the franchisee's intangible local market investments are relative to the franchisor's intangible investments, the higher should be his fraction of the residual income, and the lower should be the royalties to provide the necessary incentive for the franchisees. Empirical results from the Austrian franchise sector support this property rights view of the fee structure (Windsperger 2001). (II) In addition, since the franchisor's residual income rights are diluted by the transfer of outlet rights to the franchisee, his incentive to undertake system-specific intangible investments is lower, the lower the fees are. On the other hand, the fees serve as incentive mechanism for the franchisee to undertake investments in intangible local market assets. The lower they are, the larger is the franchisee's fraction of residual income rights. Hence, to increase the franchisor's residual income position and his investment incentive without mitigating the franchisee's investment incentive by raising the fees, the percentage of company-owned outlets (PCO) must be increased. Consequently, fees and the proportion of company-owned outlets must be simultaneously determined to establish an efficient governance structure. 3.

4 A Property Rights View of the Dual Network Structure

4.1 Franchised versus Company-owned Outlets

According to empirical studies, the organizational life cycle of franchising networks is characterized by two stages (Lafontaine & Shaw 2001; Azevedo & Silva 2001): The transitory period refers to the early stage of the life cycle in

which an unstable mix between franchised and company-owned outlets exists, and the stable period refers to the stage of the life cycle with a relatively stable mix of franchised and company-owned outlets. How can we explain the ownership structure in both stages?

(a) Unstable Contractual Mix

In the transitory period no stable mix between franchised and company-owned outlets exists. Empirical studies find a significant decrease in company ownership during the first years of franchising (Lafontaine 1992; Scott 1995; Thompson 1994; Martin 1988; Minkler & Park 1994). There are different approaches to explain the transitory contractual mix: According to the signalling theory, the franchisor may maintain some company-owned outlets with the major role of signalling the value of the brand name assets to potential franchisees (Gallini & Lutz 1992). This may explain the higher percentage of company-owned outlets in the early period of organizational life cycle. On the other hand, a rise of company ownership was proposed and extensively tested in the marketing literature (Oxenfeldt & Kelly 1968-69; O'Hara & Thomas 1986; Padmanabhan 1989; Dant et al. 1998). Based on this resource scarcity view, ownership redirection results from resource constraints (financial, local information and management resources) in the early period of franchising. With more franchise experience the percentage of company-owned outlets rises because the franchisor could already improve its financial position and also acquire outlet-specific knowledge and capabilities. However, the empirical results of these studies are mixed (Dant et al. 1996; Lafontaine & Kaufmann 1994).

How can the property rights theory explain the unstable contractual mix? Baker, Hubbard and Wernerfelt (Baker & Hubbard 2001; Baker & Hubbard 2003; Wernerfelt 2002) argue that changes in asset ownership result from changes in contractibility. Applied to franchising, changes in asset ownership are based on changes in intangibility of assets due to organizational learning of the franchisor who acquires local market knowledge during the organizational life cycle. According to Nonaka's knowledge spiral model (Nonaka 1994; Nonaka & Takeuchi 1995; Nonaka et al. 2001), organizational learning triggers a knowledge conversion process that changes the nature of local market knowledge from tacit to more explicit knowledge. Therefore, contractibility of local market assets rises during the transitory period that changes the bargaining power between the franchisor and franchisee. Under more contractible (less intangible) local market assets of the franchisees, the franchisor's system specific assets are more important for the creation of residual surplus of the network. Hence ownership rights must be transferred to the franchisor to secure the franchisor's investments in system-specific assets and to prevent the franchisee from hold-up. Consequently, due to this knowledge conversion from tacit to more explicit knowledge the PCO should rise during the organizational life cycle. This result is compatible with the resource scarcity view which states that the scarcity of information resources decreases during the organizational life cycle.

(b) Stable Contractual Mix

Empirical studies show that the percentage of company-owned outlets stabilizes after the decline in the early stage of the organizational life cycle (for instance Lafontaine & Shaw 2001; Penard et al. 2002). Similar results are found in the Austrian franchising sector (see Windsperger 2002). How can we explain the dual network structure? According to the property rights theory, the allocation of residual income rights depends on the distribution of intangible system-specific and local market assets between the franchisor and the franchisee. The higher the fraction of the franchisor's intangible assets relative to the franchisee's for the generation of residual income, the more property rights must be transferred to him, and the higher is the percentage of company-owned outlets. Hence, if the intangible system-specific assets of the franchisor are relatively important compared to the intangible local market assets, the PCO should be relatively high; and if the local market assets of the franchisee are relatively important compared to the brand name assets, the PCO should be relatively low. In addition, how can we explain the stabilizing effect of the dual structure? Based on the property rights theory, the distribution between contractible and noncontractible assets may result in a certain ownership structure. If the local market assets become fully contractible, the franchising firm will no longer exist. In this case, ownership redirection results in a vertically integrated firm with only company-owned outlets. If, on the other hand, both the franchisor and the franchisees have noncontractible assets to create the residual surplus, ownership cannot be completely redirected. Therefore, the necessary condition to explain the dual structure is a stable distribution of noncontractible assets between the franchisor and the franchisees. Depending on the importance of both parties' noncontractible assets to generate the residual income of the network, the percentage of company-owned outlets is higher or lower.

For instance, differences in the distribution of noncontractible assets between the franchisor and the franchisees may explain sectoral differences in the percentage of company-owned outlets. As shown by Lafontaine and Shaw (2001), the PCO in product franchising is much higher than in the service sector. This is also the case in the Austrian franchise sector; the PCO is 23,87 % in services and 31,04 % in product franchising. In product franchising the franchisor's intangible system-specific assets are more important for the generation of residual income of the network than the local market assets of the franchisee. On the other hand, in services the PCO is relatively lower due to the higher importance of noncontractible local market assets for the creation of residual surplus. To summarize, after a transitory period, a stable contractual mix between franchised and company-owned outlets results from a certain distribution of complementary intangible system-specific assets and local market assets.

4.2 Interaction between Company-owned Outlets and Royalties

Since residual income rights are allocated to the franchisor and franchisee, ownership rights include both residual income rights of franchised outlets (royalties and fees) and residual income rights of company-owned outlets. Given the initial fees, royalties and the proportion of franchisor-owned outlets are negatively related. The lower the royalties, the higher the PCO to maintain the franchisor's incentive to invest in intangible system-specific assets. This may be explained by the dual incentive effects of royalties (Scott 1995). Royalties are the residual income for the franchisor to invest in system-specific assets, but setting a positive royalty rate dilutes the incentive effect for the franchisee to invest in local market assets. To secure the franchisor's investment incentive under a low royalty rate, residual income rights are transferred to him by increasing the proportion of company-owned outlets. Consequently, contrary to the agency-theoretical view (Lafontaine 1992; Penard et al. 2002), company-owned outlets function as substitute for the diluted residual income rights of franchised outlets.

Which factors influence the relationship between royalties and the PCO? According to the property rights view, the interaction effect between PCO and royalties depends on the importance of intangible system-specific assets relative to the local market assets for the creation of residual surplus. (a) If the system-specific assets are very important for the generation of residual income, a high fraction of ownership rights must be transferred to the franchisor. In this case the diluted residual income rights of the franchised outlets are compensated by a relatively high PCO. (b) On the other hand, if local market assets are very important for the creation of residual surplus, more residual income rights must be transferred to the franchisee. Compared to (a), the franchisee pays relatively lower royalties and the dilution of the franchisor's residual income rights is compensated by a higher PCO. Therefore, under a more equal know-how distribution between the franchisor and the franchisee, the negative relationship between royalties and PCO is higher than under a strong know-how position of the franchisor, because in this case the franchisor's and the franchisee's investment incentives are very important for the creation of the residual surplus. In sum, we may conclude that the negative interaction between royalties and PCO depends on the bargaining power of the franchisor and the franchisee, i. e. on the importance of intangible system-specific assets relative to the local market assets for the creation of residual surplus of the network.

As a result, we summarize the property rights propositions of the dual network structure:

Proposition I: Stable contractual mix

The more important the franchisor's (franchisee's) intangible assets (know-how) relative to the franchisee's to generate the residual surplus, the more ownership rights should be transferred to the franchisor (franchisee), and the higher (lower) is the percentage of company-owned outlets.

Proposition II: Transitory contractual mix

The larger the knowledge conversion effect relative to the signalling effect during the early stage of the organizational life cycle, the more likely ownership redirection occurs.

Proposition III: Interaction between royalties and PCO

Royalties and PCO are substitutes. The more important the franchisee's intangible local market assets to generate the residual surplus, the more residual income rights should be transferred to the franchisee, and the larger is the negative relationship between royalties and PCO.

The following testable hypotheses can be derived from this property rights approach:

H1: The percentage of company-owned outlets is positively related with the franchisor's intangible system-specific assets and negatively related with the franchisee's intangible local market assets.

H2: The larger the franchise experience, the lower is the negative relationship between local market assets and PCO, and the higher is the positive relationship between system-specific assets and PCO.

H3: PCO and royalties are negatively related.

5 Empirical Analysis

5.1 Sample

The empirical setting for testing these hypotheses is the franchising sector in Austria. A national mail survey was used to collect the data from all franchise systems in Austria that were registered at the Austrian Franchise Association in 1997. The database identified a total of 216 franchise systems in Austria representing more than 90 % of all franchise systems in Austria. The data set was collected in 1997-98. After several preliminary steps in questionnaire development and refinement, including in-depth interviews with franchisors in Vienna and representatives of the Austrian franchise association, the final version of the questionnaire was pretested with 6 franchisors. The questionnaire took approximately 20 minutes to complete on average. The revised questionnaire, which incorporated the alterations suggested by the pretest, was mailed to 216 franchisors in Austria. We received 83 completed and usable responses with a response rate of 38,4%. To trace non-response bias, it was investigated whether the results obtained from analysis are driven by differences between the group of respondents and the group of non-respondents. Non-response bias was measured by comparing early and late responders (Amstrong & Overton 1977). The non-responding group includes the firms, which completed the questionnaire four weeks after the first group. No significant differences emerged between the two groups of respondents.

5.2 Measures

Intangible Assets:

They refer to the noncontractible system-specific assets of the franchisor and the local market assets of the franchisee. The franchisor's intangible assets are operationalized by the number of annual training days of the franchisee and its employees. The assumption behind this measure is that as the franchisor's intangible assets increases, so does the number of days of face-to-face interaction (Simonin 1999; Daft & Lengel 1986; Darr et al. 1995). Intangible assets of the franchisee refer to the franchisee's local market know-how. The local market know-how refers to the franchisee's local marketing, human resources, quality control and innovation capabilities. The higher the intangible local market assets of the franchisee, the larger is the local market knowledge advantage of the franchisee compared to the manager of a company-owned outlet. Therefore, we use the local market know-how advantage of the franchisee as indicator of his intangible outlet-specific assets. Furthermore, according to the resource scarcity view, this variable is a proxy for the franchisor's constraints on local market knowledge during the organizational life cycle. In the questionnaire the franchisors were asked to rate on a five-point scale to evaluate franchisee's local market assets (see appendix). We used a three-item scale to measure the local know-how advantage of the franchisee compared to the manager of a company-owned outlet. The three-item measure was extracted by employing factor analysis. All variables had a loading in excess of 0,59. The total amount of variance explained by the factor solution is 58,04 percent. The reliability of this scale was assessed by Cronbach's alpha (0,63) which is compatible with the generally agreed upon lower limit of 0,6 for exploratory research (Nunnally 1978; Hair et al. 1998).

Residual Income Rights:

They refer to the royalties and the percentage of company-owned outlets.

Control Variables:

We controlled for two variables that might affect the mix of company-owned and franchised outlets:

(1) Initial investments: According to the resource-scarcity view, initial investments are an indicator for the financial constraints of the franchisor when he intends to increase the number of outlets (Brickley et al. 1991). The higher the initial investments, the more financial resources are required to extend the network, and the higher is the tendency toward franchised outlets. In addition, according to the transaction cost theory, the tendency toward vertical integration is positively related to the extent of transaction specific investments of the franchisees because high outlet-specific investments reduce the hold-up risks for the franchisor (Klein 1980; Williamson 1985). Hence franchisee's initial investments are a proxy for transaction specific investments.

(2) Sectoral variable: Because the know-how intensity of franchising firms varies between product franchising and service firms (Zeithaml et al. 1985; Lafontaine & Shaw 2001), we include a sectoral variable to control for sectoral effects. 0 refers to product franchising and 1 to the services sector. Since the product franchising

sector is characterized by a higher fraction of intangible system-specific assets of the franchisor relative to the intangible local market assets of the franchisees, the product franchising firm should have a higher proportion of company-owned outlets compared to a firm in the service sector.

5.3 Results

1) Descriptive Results

Table 1 presents descriptive data for the sample. More than 26, 9% of the outlets are company-owned. If we differentiate between services and product franchising, the percentage of company-owned outlets is 23,8 % in the service sector and 31,04 % in the product franchising sector.

	N	Minimum	Maximum	Mean	Standard Deviation
Initial Fees	79	,00	218023 (EUR)	11797,60	25326,5000
Franchisee's Local Market Knowledge Advantage	71	1,00	5,00	3,8732	1,2754
Franchisee's Quality Advantage	70	1,00	5,00	2,7857	1,3925
Franchisee's Innovation Advantage	69	1,00	5,00	3,5072	1,3572
Annual Training Days	73	,00	60,00	15,1370	12,8941
Percentage of Company-owned Outlets	79	,63	87,50	26,9613	22,7747
Advertising Fees (Percent of Sales)	67	,00	9,00	1,2806	1,7042
Total Number Outlets	82	1,00	400,00	30,3293	59,4983
Royalties	73	,00	20,00	4,2305	4,2682

Table 1: Franchise Systems in Austria

2) Regression Analysis

To test the property rights hypotheses (H1, H2 and H3), we conducted a regression analysis with the percentage of company-owned outlets (PCO) as independent variable. The explanatory variables refer to annual training days of the franchisee and its employees (BNA), franchisee's local market know-how advantage (LMA), the initial investment (INV), royalties (FEE), and the sectoral variable (SEC). In addition, we include a dummy variable (DUM) for the

franchise experience. Table 2 presents the correlation matrix between the independent variables. We only find colinearity indication for the correlations between royalties and annual training days (0,452) and between the sectoral variable and annual training days (0,319). Hence we estimated the model both with and without the annual training days-royalties and annual training days-sector interactions. The model demonstrated a high degree of stability without any significant changes in the coefficients. Furthermore, heteroscedasticity tests do not show heteroscedasticity indication.

The regression analysis was conducted in two steps: (a) Regression without and (b) with the interaction effect between the proportion of company-owned outlets (PCO) and royalties (FEE). In (a) we applied ordinary least squares (OLS) and ordinal regression analysis, and in (b) we conducted OLS, ordinal and two-stage least squares (2SLS) regression analysis. Under OLS and 2SLS regressions, the dependent variable (PCO) was modelled as the natural log of the ratio of the percent company-owned divided by the percent franchised outlets. Shane (1998) and Norton (1988a) also use this variable. Under ordinal regression analysis, we divided the PCO variable into three groups (Chu and Anderson 1992): Systems with a relatively low PCO (smaller than 15), systems with a medium PCO (15 – 40), and systems with a relatively high PCO (larger than 40).

	Royalties	Initial Investments	Local Market Knowledge	Annual Training Days	Sector	Number of Outlets	Initial Fees
Royalties	1,000	-,067	,086	,452	,306	-,031	,233
Initial Investments	-,067	1,000	,030	,076	,073	-,009	-,081
Local Market	,086	,030	1,000	,022	,121	-,164	,096
Annual Training Days	,452	,076	,022	1,000	,319	-,259	,155
Sector	,306	,073	,121	,319	1,000	-,275	,286
Number of Outlets	-,031	-,009	-,164	-,259	-,275	1,000	-,240
Initial Fees	,233	-,081	,096	,155	,286	-,240	1,000

Table 2: Correlations between Explanatory Variables

Ad (a):

In the first step, we estimate the following regression equation without the PCO-FEE-interaction (MODEL 1):

$$PCO = \alpha + \beta_1 BNA + \beta_2 LMA + \beta_3 INV + \beta_4 (BNA * DUM) + \beta_5 (LMA * DUM) + \beta_6 SEC + \varepsilon$$

Based on our property rights hypotheses, the PCO is higher, the higher the number of annual training days (BNA), and the lower the local market knowledge advantage of the franchisees (LMA). Hence β_1 has a positive and β_2 a negative sign. In addition, INV represents the financial scarcity and the transaction costs explanation. According to the resource scarcity hypothesis (Oxenfelt & Kelley

1968-69, Caves & Murphy 1976; Dant et. al 1996), franchisors are exposed to financial constraints resulting in more franchisees that finance the network expansion. In addition, transaction cost theory states that initial investments of the franchisees are negatively related to vertical integration. Hence β_3 has a negative sign both under the resource scarcity and the transaction cost view. Furthermore, two dummy variables are included representing the knowledge conversion effect due to the franchise experience. The property rights theory suggests that the influence of the local market assets upon PCO is lower and the influence of the brand name assets upon PCO is higher, the larger the franchise experience is. Therefore, for younger systems (first franchised units founded after 1990) the negative relationship between PCO and local market assets (LMA) is higher and the positive relationship between PCO and brand name assets (BNA) is lower than for older systems. Since product franchising firms have a higher fraction of intangible assets of the franchisor, the PCO should be higher than under service firms; hence β_6 should have a negative sign.

We conducted an OLS and ordinal regression analysis (see table 3). The results are consistent with the property rights hypotheses (H1, H2). The coefficients of BNA and DUM*BNA ($\beta_1 + \beta_4$) show that the impact of the franchisor's system-specific assets upon the PCO rises during the life cycle, and the coefficients

Independent Variables	OLS	Ordinal Regression
	Intercept	Threshold Constants
	-1,33*** (0,195)	-0,8** (0,33)
BNA (System-specific Assets)	+1,677** (0,64)	+1,246*** (0,36)
LMA (Local Market Assets)	+1,098*** (0,394)	+2,759** (1,222)
INV (Initial Investments)	-0,112 (0,162)	+2,021** (0,933)
BNA*DUM	-0,112 (0,162)	-0,27 (0,387)
LMA*DUM	-1,179** (0,548)	-2,064** (1,015)
SEC (Sectoral Variable)	-1,093** (0,468)	-2,347** (0,994)
	-0,173 (0,208)	-0,884*** (0,319)

N = 54	F = 3,041 R ² = 0,275	Model chi-square = 19,257 -2 Log likelihood = 99,026 Nagelkerke R ² = 0,334
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*** P < 0,01; ** P < 0,05; *P < 0,1; values in parentheses are standard errors.

Table 3: OLS and Ordinal Regression (Model 1)

of LMA and DUM*LMA ($\beta_2 + \beta_3$) indicate that the impact of franchisee's outlet-specific assets upon the PCO declines during the organizational life cycle indicating a tendency toward ownership redirection. However, for older franchise systems (first franchised unit founded before 1990) the influence of LMA upon the PCO is positive. In addition, the coefficient of INV is negative but not significant indicating that financial constraints and the transaction cost hypotheses are not supported by our data. The coefficient of SEC is negative and significant in the ordinal regression model.

Ad (b):

In the second step, we estimate the regression equation with FEE as additional explanatory variable (MODEL 2).

$$PCO = \alpha + \beta_1 BNA + \beta_2 LMA + \beta_3 INV + \beta_4 (BNA * DUM) + \beta_5 (LMA * DUM) + \beta_6 SEC + \beta_7 FEE + \varepsilon$$

According to our property rights hypothesis (H3), PCO and FEE are negatively related; hence β_7 has a negative sign. Since simultaneity may exist due to the correlation between the error term and the royalties as explanatory variable, we conducted a Hausmann specification test and a 2SLS regression analysis (Pindyck & Rubinfeld 1991). The specification test did not confirm simultaneity indicating that the coefficients of the OLS regression are unbiased. Based on OLS and ordinal regressions, the data only provide partial support for the hypothesis that the PCO and FEE are substitutes (see table 4). In addition, the fit of the model increased by including the royalty rate in the regression model. Furthermore, based on 2SLS regression analysis (see table 2b), the significance of the coefficient of FEE is slightly higher than under OLS regressions. As a result, the data provide some support for the property rights hypotheses H1 and H2, but only very weak support for the substitutability hypothesis (H3).

Independent Variables	<i>OLS</i>	<i>Ordinal Regression</i>	<i>2SLS</i>
	Intercept -1,215*** (0,185)	Threshold Constants -1,061*** (0,375) +1,365*** (0,399)	Intercept -1,309*** (0,245)
BNA (System-specific Assets)	+1,861*** (0,638)	+3,327** (1,312)	+2,558*** (0,932)
LMA (Local Market Assets)	+0,998*** (0,366)	+1,693* (0,918)	+0,778* (0,433)
INV (Initial Investments)	-0,146 (0,151)	-0,412 (0,485)	-0,094 (1,17)
BNA*DUM	-1,329** (0,531)	-2,347** (1,063)	-1,778** (0,698)
LMA*DUM	-1,184** (0,442)	-2,225** (0,999)	-0,979* (0,524)
SEC (Sectoral Variable)	-0,161 (0,199)	-0,798** (0,343)	-0,069 (0,266)
FEE (Royalties)	-0,213 (0,214)	-0,664* (0,358)	-0,903+ (0,567)
N = 50	F = 3,131 R ² = 0,338	Model chi-square = 24,203 -2 Log likelihood = 85,487 Nagelkerke R ² = 0,428	F = 2,733 Pseudo R ² = 0,353

*** P < 0,01; ** P < 0,05; *P < 0,1; +P < 0,12; values in parentheses are standard errors.

Table 4: OLS, Ordinal and 2SLS Regressions (Model 2)

5.4 Discussion

This study presents empirical evidence from the Austrian franchise sector that the dual ownership structure in franchising firms can be explained by the distribution of system-specific and local market assets between the franchisor and franchisee. As suggested by our data, noncontractible system-specific and local market assets influence the contractual mix between company-owned and franchised outlets. In addition, our data suggest that the impact of system-specific assets relative to the local market assets upon the percentage of company-owned outlets is higher, the larger the franchise experience is. This may indicate that the knowledge conversion from tacit to more explicit local market knowledge during the organizational life cycle improves the franchisor's bargaining power and explains the tendency toward ownership redirection. Moreover, the data provide only very weak support for the substitutability hypothesis between royalties and the proportion of company-owned outlets. In addition, we compare the property rights results with the resource scarcity and transaction cost view. According to the resource scarcity view, the proportion of company-owned outlets varies negatively with the franchisor's restraints in financial and informational resources, and the transaction cost theory states that the franchisee's specific investments are negatively related to the degree of vertical integration. The empirical results are only supportive of the information scarcity hypothesis measured by the impact of the franchisee's local market knowledge advantage on the PCO. This hypothesis is consistent with our property rights hypothesis regarding the influence of franchisee's local market assets on the percentage of company-owned outlets. On the other hand, the financial scarcity hypothesis is not supported by our data. This may be due to the fact that, contrary to the property rights approach, the resource scarcity view does not differentiate between intangible (noncontractible) and tangible resources. According to Hart and Moore (Hart & Moore 1990; Hart 1995), only intangible resources explain the structure of ownership rights. Since financial resources are more contractible due to a relatively low degree of intangibility, this may explain their insignificant impact on the proportion of company-owned outlets. On the other hand, the empirical results are not consistent with the asset specificity hypothesis. This may be due to the unsolved problem in transaction cost economics that specific but contractible assets may not explain asset ownership (Whinston 2000; Woodruff 2001).

This study is not without limitations: It used cross-sectional data instead of panel data to explain the mix between franchised and company-owned outlets. In addition, the study used proxy variables to measure some of the constructs. Especially the proxy variable to measure intangible local market assets might be criticized because this measure was based on the franchisor's perception. In future research the operationalization of franchisee's intangible assets should be improved by collecting data from franchisees. In addition, multi-item constructs should complement the proxy for the franchisor's intangible assets.

This study also has managerial implications. First, in accordance with Lafontaine and Shaw (2001), we may conclude that the ownership structure of franchising firms is an important managerial control factor. Franchising firms set a target level of company ownership which depends on the distribution of intangible system-specific and local market assets between the franchisor and the franchisee. Second, based on our property rights view, this target level must be adjusted during the organizational life cycle when the contractibility of assets changes. For instance, if the contractibility of local market assets increases, the importance of system-specific assets for the creation of residual income increases resulting in an increase of the franchisor's bargaining power. In order to secure the incentive to invest in intangible system-specific assets, the franchisor has to increase his fraction of ownership rights in the network. Third, given the distribution of intangible assets between the franchisor and franchisee, the franchisor may exercise managerial control by determining the 'optimal' mix between the proportion of company-owned outlet and the royalties. Due to the dual incentive effects of royalties, the proportion of company-owned outlets and the royalty rate are substitutes.

5 Conclusions

The paper offers a property rights explanation for the dual ownership structure in franchising networks. We argued that the percentage of company-owned outlets depends on the distribution of intangible assets between the franchisor and franchisee. The franchisee's intangible assets refer to the local market assets and the franchisor's intangible assets to the system-specific assets. The more important the franchisor's and the franchisee's intangible assets are for the generation of residual income, the more residual income rights should be transferred to both, and the higher should be the percentage of company-owned outlets and the lower should be the royalties. Therefore, company-owned outlets compensate the disincentive effect of the diluted residual income rights of franchised outlets and, in turn, they enable the transfer of more residual income rights to the franchisees by charging lower royalties. Further, we presented empirical results using data collected in the Austrian franchise sector. The data provide some support for the hypothesis that the dual network structure is determined by the distribution of

intangible assets of the franchisor and franchisee. In addition, the empirical results support the information scarcity hypothesis, but do not support the financial scarcity and asset specificity hypotheses.

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Appendix: Measures of Variables

Proportion of Company-owned Outlets (PCO)

Annual Training Days (BNA): Number of annual training days (franchisee and his employees)

Fees (FEE): The royalty rate (including advertising) is measured as the ongoing percentage of gross sales that franchisees must pay to franchisors.

Franchisee's Intangible Knowledge Assets:

LMA (three items; Cronbach alpha = 0,63)

Franchisee's know-how advantage compared to the manager of a company-owned outlet, evaluated by the franchisor (no advantage 1 – 5 very large advantage)

1. Innovation

2. Local market knowledge
3. Quality control

Initial Investment (INV): \$ value of franchisee's start-up investments to open an outlet.

Sectors (SEC): 0 = Product franchising firms; 1 = Services firms

DUM: 1 for franchise systems which opened the first franchised outlet between 1990 and 1998, and 0 for systems which opened the first franchised outlet before 1990.