Organizational Form and Performance: Evidence from the Hotel Industry

Francine Lafontaine

(with Renáta Kosová and Rozenn Perrigot)

Outline

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  - Why analyze differences in performance due to organizational form?
  - Why compare Franchising vs. Company Operations?
  - Our Contribution

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- Conclusions and Implications for Policy

Motivation: Organizational Form & Performance

- ☐ Most of the literature on organizational form focuses on the choice of, or incidence

- ☐ Yet at the end of the day – care about effects

- ☐ Especially true from a policy perspective

- ☐ This paper:

  Are there differences in outcomes (here revenues, occupancy, and RevPar) between establishments (here hotels) operating under different forms of governance (here "franchised" vs. "corporately owned and operated")?

Motivation:

Why Franchising vs. Company Operation?

- Many reasons to expect differences in outcomes - such as prices and revenues - between franchised (separated) and company owned and operated (integrated) units

- E.g. traditional *principal-agent model* suggests that everything else the same, the *higher powered incentives of franchisees* should lead to *higher effort* => larger revenues

- However – *franchisee ownership* of an outlet *might also lead to free-riding on the brand*, and thus lower quality (and/or higher prices) => lower output and revenues

Motivation:

Why Franchising vs. Company Operation?

- So *predictions from economic theory differ depending on* whether the outcome is mostly affected by the basic incentive issue that residual claims resolve (*agency problem*) or that profit-max. franchisees owning the outlet can increase profits via *free-riding*

- Re *prices* - franchising literature also implies higher prices in franchised outlets due to: double-marginalization, high costs of writing and enforcing contracts, or positive spillovers within franchise system

- However - one might also expect no differences in outcomes otherwise the franchisor would make different choices

Prior Literature:
Franchising vs. Company Operation & Performance

- In fact, some authors have looked at effect of franchising on some outcomes

- Oldest paper: Shelton (1967) found higher cost and lower profit under company ownership; but no differences in revenues

- Studies of divorcement (Barron & Umbeck, 1984; Vita, 2000 and Blass & Carlton, 2001 all on gasoline retailing in US; and Slade, 1998 on beer, in UK - show higher prices when direct company operations were prevented

Prior Literature:
Franchising vs. Company Operation & Performance

- But *these analyzed differences* in outcomes between the two organizational forms *while firms were* somehow *"constrained"* in their choice of organizational form

- Few studies have looked at whether we see differences when organizational form *is freely* chosen

- *And results from these few studies are contradictory* (e.g. Shepard, 1993 vs. Hastings, 2004, on gasoline prices; or Bradach, 1998 vs. Michael, 2000 and Leslie and Jin, 2009, on quality in fast-food)

Prior Literature:
Franchising vs. Company Operation & Performance

- The problem is that the effects of organizational form or contractual decisions are difficult to identify empirically

  - prior studies mostly cross-sectional (self-selection issues due to unobserved heterogeneity)

  - in many contexts, companies operate a given product only under 1 form of governance

- *More specifically* - firms do not make these choices randomly: they choose organizational form based on what they expect will give the best outcome in a given situation (e.g. Shepard, 1993) - i.e. conditional on outlet and market characteristics, both observed & unobserved (to us)

Prior Literature:
Franchising vs. Company Operation & Performance

☐ In fact, this is exactly what the literature on incidence relies upon and tries to capture

☐ But it also raises important endogeneity issues when it comes to assessing the effects/consequences of organizational form on firm behavior or performance

☐ While understood as an issue, empirically, problem with finding valid instruments (Lafontaine & Slade, 2007)

Our Contribution:
Organizational Form and Performance

- We have an *unconstrained* research context:
  - If firms *are free to choose* to organize their operations – *does organizational form per se* lead to *differences in outcomes?*
  - Or are outcome differences (often found in aggregate data) due to other factors?

- *Unique* data:
  - *All* hotels of a particular franchisor/Company in its home market
  - Company runs hotels under *both org-forms within same brands/chains*
  - *Panel data* – detailed info on market and hotel characteristics
    → *can control also for hotel specific effects*

- *We have* what we argue is a valid *instrument for organizational form* – Proportion of the Company's Other Hotels that are Franchised in the local market (we also explore alternative IVs)

The Data

- 2 Complementary sources:
  - confidential data provided by alarge hotel Company
  - government data on local market characteristics

- Company operates several chains, internationally - our data provide detailed info on its home operations:
  - monthly data - 34 months (Jan 2001-Oct 2003)
  - 1194 hotels in our sample (quite balanced; average 32 obs. per hotel)
  - across several brands – from budget to luxury

- Government Data on local market characteristics:
  - population (in 1999) and median household income (in 2000),
  - tourism intensity (monthly, 0- 4 index, in 1998)
  - total number of hotels and restaurants in the market (in 1998)

The Data

□ For each hotel of this company, we know:

- Company owned or franchised
- Total monthly revenues
- Monthly occupancy rate (Rooms Sold/Rooms Available)
- Price (ADR=Average Daily Room rate)

    => we can construct RevPar (Revenue per Avail. Room)

    => key measure of financial performance in the industry

- Hence 3 *outcome* measures we focus on: *Occupancy Rate, Price* and *RevPar*

- Many other hotel characteristics: number of rooms, age of hotel, brand, hotel amenities (e.g. restaurant, AC, fitness, café, etc.), location specifics (near train/airport) and hotel geographic info (=> allows us to calculate Company's other hotels in the market and hotel distance to HQ for our IVs)

Table 1: Descriptive Statistics, by Hotel.

	Mean	Std. Dev.	Minimum	Maximum
Price (Room Rate)	**53.67**	**31.45**	**20.38**	**292.54**
RevPar	**37.23**	**21.73**	**10.51**	**196.79**
Occupancy Rate (%)	**70.43**	**10.94**	**32.25**	**101.39**
Monthly Revenues (000's)	172.31	251.47	20.15	3118.99
% Franchised	0.34	0.47	0	1
Number of Rooms	91.24	67.35	29.94	782
Hotel Age	13.41	8.37	1	73.94
Other Hotels in Market	22.19	33.19	0	266
Tourism Intensity	1.71	1.08	0	4
Population	193383	498502.6	192	2125851
Income	9993.03	2110.97	4161.71	23021.63
Restaurant on Site	0.44	0.50	0	1
Outdoor Cafe	0.27	0.44	0	1
Air Conditioning	0.47	0.50	0	1
Fitness Facility	0.05	0.23	0	1
Company's Other Hotels in Market: Proportion Franchised	0.17	0.27	0	0.8
Distance from Headquarters	300.55	221.32	0	917.18
Company's Other Hotels in Mkt: Number	9.37	22.71	1	99

Table 2: Descriptive Stats by Brand-groups. Means.

	Group 1	Group 2	Group 3	Group 4	Group 5
Number of Hotels	152	236	331	193	284
Price (Room Rate)	98.99	77.39	54.10	32.91	23.40
RevPar	64.82	49.47	39.65	24.89	17.82
Occupancy Rate (%)	64.09	62.23	72.02	74.95	75.55
Monthly Revenue (000's)	487.47	233.24	153.93	67.37	46.51
% Franchised	15.33	50.47	51.69	45.45	2.8
Number of Rooms	140.45	96.63	88.53	75.96	74.17
Hotel Age	21.81	13.10	14.93	5.7	12.67
Other Hotels in Market	32.03	34.54	25.68	16.78	8.68
Tourism Intensity	1.85	1.91	1.86	1.74	1.25
Population	303405	303613	240994	102683	49352
Income	10739	10305	9956	9750	9544
Restaurant on Site	0.99	0.68	0.64	0	0
Outdoor Cafe	0.11	0.50	0.57	0	0
Air Conditioning	0.91	0.79	0.56	0.30	0
Fitness Facility	0.22	0.13	0	0	0
Company's Proportion Franchised	0.18	0.17	0.20	0.17	0.13

Table 3: Franchised vs. Corporate - Mean Comparisons.

	Franchised (34%)	Corporate (66%)	Difference Sign.
Price (Room Rate)	56.35	52.29	**
Revpar	38.60	36.52	
Occupancy (%)	68.31	71.52	***
Rev./month (000's)	126.89	195.71	***
Number of Rooms	74.24	100	***
Hotel Age	10.25	15.04	***
Other Hotels in Market	23.77	21.36	
Tourism Intensity	1.92	1.60	***
Population	225,612	176,777	
Income	9929	10026	
Restaurant on Site	0.46	0.43	
Outdoor Cafe	0.40	0.21	***
Air Conditioning	0.60	0.41	***
Fitness Facility	0.03	0.06	
Company's Proportion Franchised	0.233	0.138	***
Distance from Headquarters	322.06	289.47	***
Company's Other Hotels in Mkt: Number	10.97	8.54	*

Empirical Methodology

□ We estimate the following (all non-dummy vars in logs):

$$Y_{it} = f(F_{it}, X_{it}, Z_i, \varepsilon_{it})$$

where: i = hotel and *t* = month (1 through 34)

Y_{it} - *outcome* variable: Occupancy Rate, RevPar or Price

F_{it} - organizational form dummy var.: franchised (F_{it} =1) or
company operated ($F_{it} = 0$),

X_{it} - time-varying hotel and market characteristics
   (number of rooms, age; four tourism intensity dummy vars (0=lowest;
   4=highest), month dummy vars. and lagged price (occrate) if outcome is
   occrate (price))

Z_i - time-invariant hotel and market characteristics
   (hotel brand dummy vars; population, income, amenity and airport/ train
   dummy vars; hotel and restaurant competition intensity dummy vars)

Empirical Methodology

- If assume $\varepsilon_{it} = \mu_i + u_{it}$ is a composite error term, where:

  μ_i = *hotel* unobserved *uncorrelated* (w/ regressors) *heterogeneity*

  u_{it} = idiosyncratic error term

- then can control for μ_i either with by clustering errors at the hotel-level, or using random effects (RE) estimation with standard errors adjusted for heteroscedasticity

I) Estimations – Franchised dummy treated as exogenous

- OLS (w/ clustered standard errors)
- Then *control for self-selection:* allow for partial correlation of μ_i with regressors → control for *correlated* unobserved *hotel heterogeneity* (i.e. hotel FE) via Mundlak's (1978) approach, namely assume:

$$\mu_i = \overline{X}\xi + a_i$$

II) Estimations – Franchised dummy endogenized (IV) – more on this later

Results (Tab. 4): Log (RevPar) - *Franchised as exog.*

		controlling for hotel "FE"	
	OLS(cluster)	OLS(cluster)	RE
Franchised	**-0.046***	**-0.039****	**-0.042***
	[0.017]	**[0.017]**	**[0.016]**
Number	**-0.015**	**-0.268***	**-0.266***
of Rooms	**[0.024]**	**[0.069]**	**[0.048]**
Hotel Age	**0.081***	**0.240***	**0.222***
	[0.011]	**[0.022]**	**[0.016]**
Air Conditioning	**0.103***	**0.100***	**0.087***
	[0.020]	**[0.020]**	**[0.021]**
Tourism Int. (=4)	**0.207***	**0.411***	**0.410***
(0=low is control g)	**[0.023]**	**[0.027]**	**[0.010]**
Observations	**39226**	**39226**	**39226**
# of Hotels	**1194**	**1194**	**1194**
R2	**0.74**	**0.75**	**0.85**

Results (Tab.4): Log (Price) - *Franchised as exog.*

		controlling for hotel FE	
	OLS(cluster)	**OLS(cluster)**	**RE**
Franchised	**-0.022****	**-0.018***	**-0.013***
	[0.011]	**[0.011]**	**[0.007]**
Lagged	**0.142*****	**0.044*****	**0.043*****
Occupancy	**[0.013]**	**[0.005]**	**[0.003]**
Number	**0.024**	**0.002**	**0.0001**
of Rooms	**[0.015]**	**[0.028]**	**[0.015]**
Hotel Age	**0.004**	**-0.022*****	**-0.005**
	[0.007]	**[0.008]**	**[0.005]**
Air Conditioning	**0.067*****	**0.064*****	**0.067*****
	[0.012]	**[0.011]**	**[0.012]**
Tourism Int. (=4)	**0.103*****	**0.114*****	**0.115*****
(0=low; control g.)	**[0.013]**	**[0.009]**	**[0.004]**
Observations	**37936**	**37936**	**37936**
R2	**0.93**	**0.93**	**0.93**

Results (Tab.4): Log (Occup. Rate) - *Franchised exog.*

	OLS(cluster)	controlling for hotel FE	
		OLS(cluster)	RE
Franchised	**-0.013**	**-0.007**	**-0.013**
	[0.009]	**[0.009]**	**[0.010]**
Lagged	**0.306*****	**0.218*****	**0.206*****
Price	**[0.029]**	**[0.022]**	**[0.015]**
Number	**-0.039*****	**-0.268*****	**-0.266*****
of Rooms	**[0.012]**	**[0.041]**	**[0.030]**
Hotel Age	**0.057*****	**0.193*****	**0.168*****
	[0.007]	**[0.019]**	**[0.013]**
Air Conditioning	**0.013**	**0.006**	**-0.0004**
	[0.011]	**[0.011]**	**[0.012]**
Tourism Int. (=4)	**0.060*****	**0.257*****	**0.255*****
(0=low; control g.)	**[0.013]**	**[0.019]**	**[0.008]**
Observations	**37936**	**37936**	**37936**
R2	**0.42**	**0.44**	**0.48**

Empirical Methodology: *Franchised dummy endo*

- □ Exists other potential sources of correlation between the idiosyncratic shock (u_{it}) and organizational form (e.g. hotel specific demand/supply shocks or over time changes in hotel-level unobserved heterogeneity (fixed effects))

- □ Thus we search for IV to endogenize organizational form and estimate the performance equation using standard 2SLS

- □ Note: though our endogeneous variable is binary, we use a LPM for the first-stage regression (Heckman (1978, 1990) and Wooldridge (2002))

Empirical Methodology: *Franchised dummy endo*

- **IV:** ***Proportion of the Company's Other Hotels that are Franchised*** (across all brands in the same market & given month)

Why it is a valid IV?

- Affects the Company's "oversight" costs locally – so should be correlated w/ the choice of organizational form for hotel i
  - franchising often used to operate in more rural, farther away markets that are also often less familiar to a franchisor (e.g. different demographics, culture, regulation (Lafontaine and Slade, 2007))
  - since franchisees "local" they can better adjust to local market conditions (Cox and Mason, 2007)
  - franchisees also need assistance and oversight → so franchisors cluster the franchised outlets geographically (Kalnins and Lafontaine, 2004); the corporate units seem to be clustered for the same reasons…
    (our data in Table 3 also support this)

Empirical Methodology: *Franchised dummy endo*

At the same time however…

- Proportion of other hotels franchised does *not* affect performance of the target hotel *directly*. WHY?
  - no effect on hotel's operating costs in the market
  - no effect on hotel demand either - customers rarely know/search for ownership when booking a hotel
  - thus no reason that manager of hotel *i* should/would react differently to the competitive threat posed by local franchised versus corporately owned hotels (and thus "Proportion of Company's Other Franchised hotels") in market
  - we already control for various hotel and market characteristics that can affect performance outcomes directly (incl. hotel "FE") …
  - Lafontaine and Shaw (2005) – franchisors tend to target a stable mix of corporate vs. franchised units in the long run. So
    - this target ratio = corporate-level decision, affecting the likelihood a given hotel is franchised or not
    - hotel price, performance = business-unit outcomes (depend on hotel-level decisions)

- Statistically – IV performs well (Table A1: 1ˢᵗ stages)

Results: IV Estimation – *Franchised endogeneous*
(controlling for hotel FE; Tab.5- 2nd stage; Tab.A1 -1st stage)

2nd stage Dep. Var.	Log(RevPar)	Log(Price)	Log(Occup).
Franchised (2nd stage)	**-0.0** [0.09]	**0.031** [0.05]	**-0.077** [0.05]
1st stage (LPM) results:			
IV: Company's Other Hotels in Mkt. Proportion Franchised	0.34*** [0.06]	0.34*** [0.06]	0.34*** [0.06]
Observations	39226	37936	37936
# of Hotels	1194	1194	1194
F-stat on sign. of IV	33.98***	33.60***	34.69***
Adj. R2	0.43	0.43	0.43

Stand. errors corrected for heteroscedasticity and hotel-level clusters.
Sign: * 10%; ** 5%; *** 1%.

- **1st stage results (Linear Prob. Model) show** - the prob. of a hotel being franchised increases by 9% (at means) for a 1-stand. dev. increase (0.27) in our IV-variable.

- **ALSO - while FRdummy now insign.** – impacts of other variables remain same.

Other Analyses and Robustness Checks

- Our finding remains even if we re-estimate results:
  - Including the Cross Effects of Franchised dummy w/ Age & Size: Does Franchising have Non-linear impact on Outcomes? → NO
  - On Balanced Sample (drop 122 hotels w/ incomplete time series)
  - Across Brand-based Sub-samples (5 brand-groups in Table 2)
  - UsingTotal Hotel Revenues per Month (instead of RevPar)
  - Controlling for Multi-Unit Ownership (among franchised hotels)
    - If franchisee owns more hotels - supervision may become problematic as for the franchisor
      → downward bias in franchising dummy coef.
    - Such franchisee may have market power
      → upward bias in franchising dummy coef.
  - using Alternative IVs for Franchising Dummy
    - Log (Hotel Density) + Log (Hotel Distance to HQ)
  - excluding (potential) Outliers (drop obs. with dep. var larger than 95th pctile)

Robustness Checks – Quantile Regressions

- Instead of focusing on "means" explore differences in outcomes for franchised and corporate at different parts of distributions

- Less susceptible to outliers than OLS and IV

- Higher/lower variation in outcomes may give rise to different responses to organizational form - could show up in these regressions

- Re-estimate our baseline model (controlling for hotel FE but treating franchising as exogenous) for three quantiles: 25th, 50th (median) and 75th percentile

  - estimate all percentiles simultaneously
  - bootstrap stand. errors w/ 100 replications (RevPar – 50 repl.)

Robustness Checks: Quantile Regressions (Tab.7)

Dep. Var	Estimate of *Franchised dummy*		
	q25	**q50**	**q75**
Log(Price)	**-0.003** [0.002]	**-0.003** [0.002]	**-0.007***** [0.002]
Log(Occup.)	**-0.011***** [0.004]	**-0.005** [0.003]	**-0.004*** [0.002]
Log(RevPar)#	**-0.031***** [0.005]	**-0.021***** [0.005]	**-0.013***** [0.005]

Bootstrapped stand. errors in brackets. # Only 50 replic. Signific. at: * 10%; ** 5%; *** 1%.

Summary of Results:

▪**Price:** *OLS* - franchised lower by 2% (1.07 euro); *QR*- lower at q75 only by 0.7% (0.49 cents). At the same time - whether a hotel has e.g. fitness or faces high tourism generates 9% (i.e. more than 10-times larger) positive difference in P.

▪**Occup:** *OLS -* no sign. diff.; **QR**- diff. for q25 but only 1% (at occup. 60.6%; while e.g. fitness generates 6% difference, high tourism 26% difference)

▪**RevPar:** **OLS** - franchised lower by 4%; **QR** – diff. about 1-3% (while e.g. fitness generates a difference 12-15%; high tourism 25-37%).

Robustness Checks – Quantile Regressions

In sum, quantile regressions

- ☐ confirm previous conclusions
  - ◼ the differences in outcomes due to organizationl form are either statistically insignicant and/or very small compared again to the impact of other vars (e.g. amenities, tourism intensity)

- ☐ responses to organizational form across quantiles are quite similar and similar to (or even smaller than) responses at the means

Conclusion – Summary of Findings

- ☐ Aggregate data patterns (unconditional mean comparisons) – which managers pay much attention to – suggest important performance differences between franchised and non-franchised hotels
  - ■ higher P and lower Occupancy for franchised hotels

- ☐ However, *once we control for hotel and market characteristics*, and for self-selection bias due to hotel unobserved correlated heterogeneity we find
  - ■ lower rather than higher prices in franchised hotels
  - ■ lower revenues per available room (RevPar)
  - ■ similar occupancy rates.
- ☐ More important, these *differences are economically small* when compared to effects of other hotel and market characteristics
- ☐ Note: quantile regression results further confirm this

Conclusion – Summary of Findings

□ **Finally,** *all significant differences in outcomes (price or performance) between franchised and corporate hotels disappear* once we endogenize organizational form (i.e. account fully for the fact that such choice is not random in our performance/ outcome equations)

□ So the outcome differences observed in aggregate data between the two groups *are not due to* organizational form per se, but rather due to other hotel and market factors that jointly determine performance and organizational form

Conclusion – Implications

□ When *unconstrained* , the Company can optimally choose which hotels to franchise and operate (based on market and outlet characteristics)

=> it achieves consistent results between the two sets of hotels (similar to Hastings (2004))

□ Consistent with idea that if the Company could systematically obtain larger RevPar or Occupancy or better prices, by changing the organizational form it would do so

□ The stability of organizational form over time in our data suggests that the Company has not found many opportunities to do so

□ *Overall, our results support TCE argument* that differences in outcomes due to organizational form should not persist over time

Conclusion – Implications

☐ **So from a policy perspective – do our results imply that e.g. laws for or against franchising, should have no effect on performance?**

- Quite the opposite
- Comparing our results - for the *unconstrained* setting - to those from studies that found significant performance differences when firms' choices of organizational form *were restricted* by policy, suggests that such policy can significantly alter firm performance and outcomes

Monthly Variation in Prices (in 5 percentiles); Jan.'01- Oct.'03.

Hotel-level Std.Deviations in Prices during Jan.'01-Oct.'03.
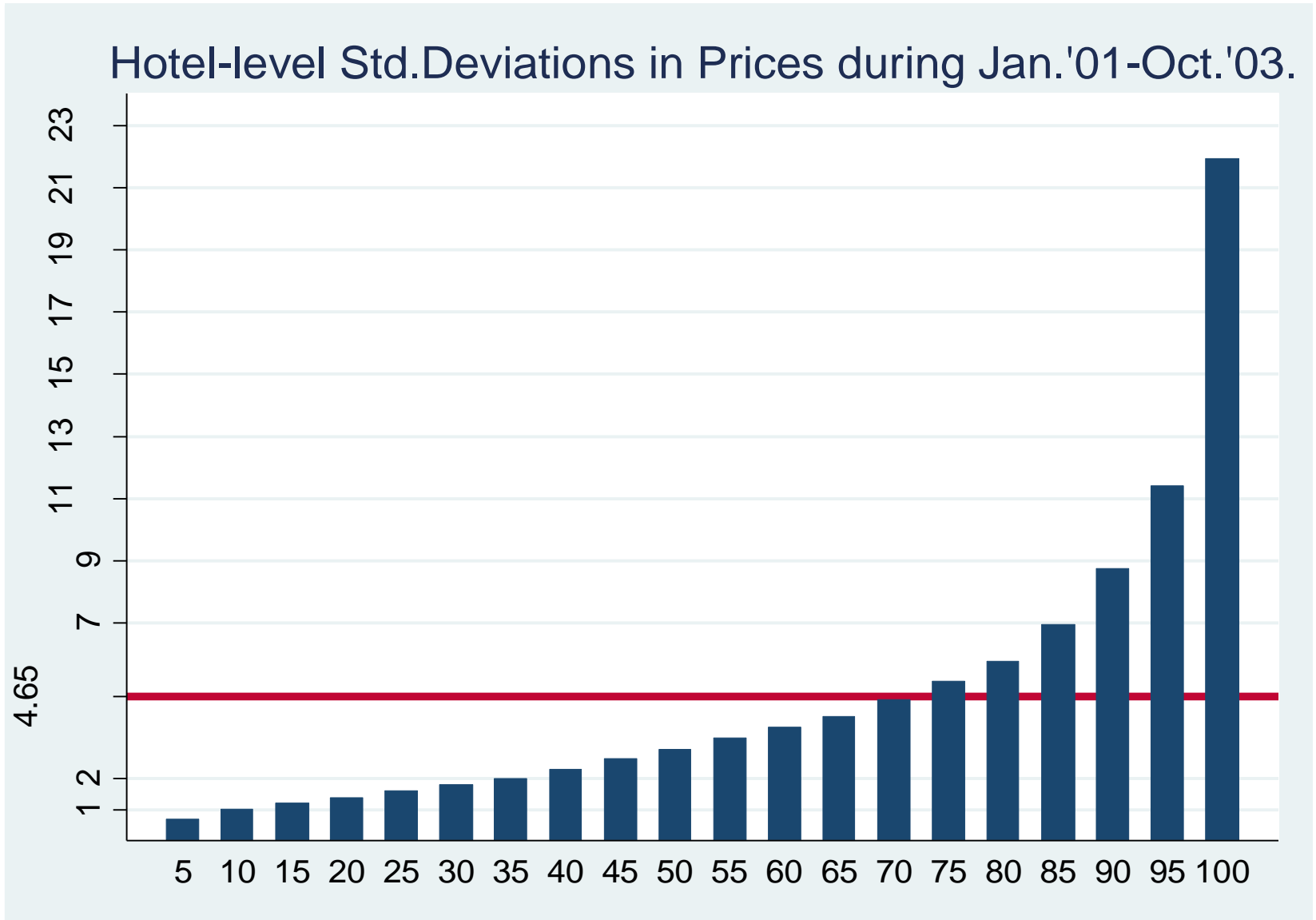
Monthly Variation in RevPar (in 5 percentiles); Jan.'01- Oct.'03.

Hotel-level Std.Deviations in RevPar during Jan.'01-Oct.'03.
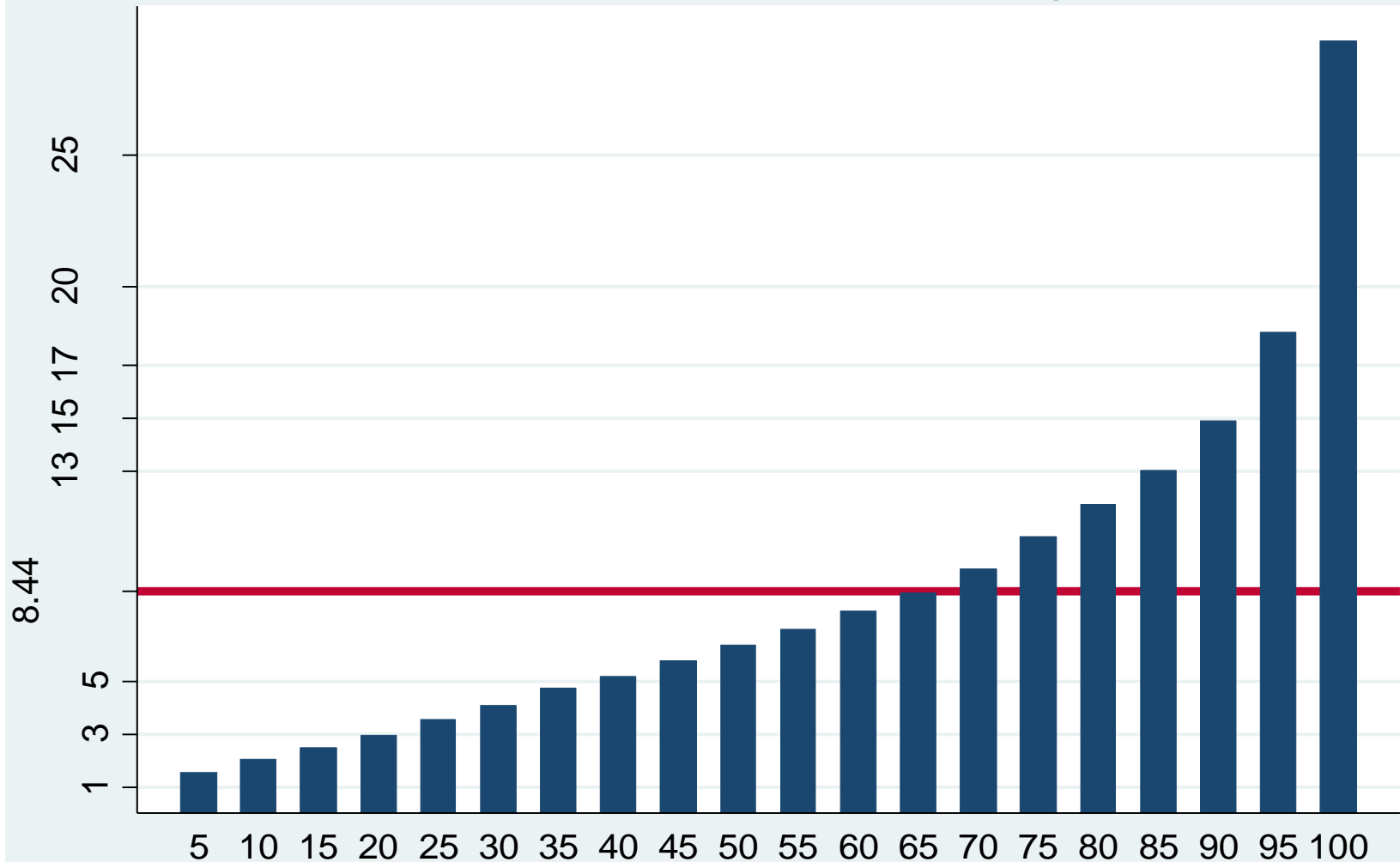
Monthly Variation in Occup.Rates (in 5 pctiles); Jan.'01- Oct.'03.

Hotel-level Std.Dev. in Occupancy during Jan.'01-Oct.'03.