

Inside the Family Firm: The Role of Families in Succession Decisions and Performance*

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This paper uses a unique dataset from Denmark to investigate the impact of family characteristics in corporate decision making and the consequences of these decisions on firm performance. We focus on the decision to appoint either a family or external chief executive officer (CEO). The paper uses variation in CEO succession decisions that result from the gender of a departing CEO's firstborn child. This is a plausible instrumental variable (IV), as male first-child firms are more likely to pass on control to a family CEO than are female first-child firms, but the gender of the first child is unlikely to affect firms' outcomes. We find that family successions have a large negative causal impact on firm performance: operating profitability on assets falls by at least four percentage points around CEO transitions. Our IV estimates are significantly larger than those obtained using ordinary least squares. Furthermore, we show that family-CEO underperformance is particularly large in fast-growing industries, industries with highly skilled labor force and relatively large firms. Overall, our empirical results demonstrate that professional, non-family CEOs provide extremely valuable services to the organizations they head.

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TABLE I. FIRM CHARACTERISTICS BY TYPE OF CEO SUCCESSION

Variable	Type of Succession			Difference
	All	Family	Unrelated	
	(I)	(II)	(III)	(IV)
Ln assets	8.605 (0.0240) [5,334]	8.232 (0.0332) [1,776]	8.791 (0.0315) [3,558]	-0.559 *** (0.0458)
Operating return on assets (OROA)	0.065 (0.0020) [5,334]	0.074 (0.0032) [1,776]	0.061 (0.0025) [3,558]	0.013 *** (0.0041)
Net income to assets	0.033 (0.0019) [5,334]	0.038 (0.0031) [1,776]	0.031 (0.0024) [3,558]	0.007 * (0.0039)
Industry-adjusted OROA	-0.002 (0.0020) [5,334]	0.007 (0.0032) [1,776]	-0.006 (0.0025) [3,558]	0.014 *** (0.0041)
Firm Age	19.417 (0.3106) [5,334]	19.826 (0.4840) [1,776]	19.213 (0.3981) [3,558]	0.613 (0.6267)

Notes:

- The table presents firm characteristics at the time of the chief executive officer (CEO) transition.
- CEO successions are classified into two groups: *family*, when the entering CEO is related by blood or marriage to the departing CEO, and *unrelated* otherwise.
- Ln* assets is the natural logarithm of the total book value of assets in Danish Kroner. OROA is the operating income (*Primært resultat*) to book value of assets. Net income to assets is the ratio of net income (*Årets resultat*) to book value of assets. Industry-adjusted OROA is the difference between OROA and the average of its four-digit NACE (European industry classification system) benchmark. Firm age is the difference between the year of CEO transition and the oldest of: the year of establishment, the year of registration, or the year of firms' bylaws.
- Firm characteristics are from the *Købmandsstandens Oplysningsbureau's* (KOB) dataset, which is based on firms' annual reports to the Danish Ministry of Economic and Business Affairs.
- Standard errors are in parentheses and the numbers of observations are in square brackets. ***, **, and * denote significance at the 1, 5, and 10 percent levels, respectively.

TABLE II. FIRM SUCCESSIONS AND FAMILY CHARACTERISTICS OF DEPARTING CEOs

Description	Number of Successions	Type of Succession							
		Family		Unrelated		Family: Children		Family: Others	
		Number	Share	Number	Share	Number	Share	Number	Share
		(II)	(III)	(IV)	(V)	(VI)	(VII)	(VIII)	(IX)
(I)	(II)	(III)	(IV)	(V)	(VI)	(VII)	(VIII)	(IX)	
All	5,334	1,776	0.333	3,558	0.667	863	0.162	913	0.171
<i>A. Number of spouses:</i>									
0	434	79	0.182	355	0.818	5	0.012	74	0.171
1	4,282	1,541	0.360	2,741	0.640	802	0.187	739	0.173
2 or more	618	156	0.252	462	0.748	56	0.091	100	0.162
Difference (2 or more) minus (1)			-0.107 *** (0.020)				-0.097 *** (0.013)		-0.011 *** (0.016)
<i>B. Number of children:</i>									
0	642	159	0.248	483	0.752	-	0.000	159	0.248
1	807	235	0.291	572	0.709	96	0.119	139	0.172
2	2,397	770	0.321	1,627	0.679	389	0.162	381	0.159
3	1,152	476	0.413	676	0.587	296	0.257	180	0.156
4 or more	336	136	0.405	200	0.595	82	0.244	54	0.161
Difference (1) minus (0)			0.044 * (0.023)				0.119 *** (0.011)		-0.075 *** (0.022)
Difference (3) minus (1)			0.122 *** (0.022)				0.138 *** (0.017)		-0.016 *** (0.017)
<i>C. By gender ratio (male/children):</i>									
< 50 percent	1,511	437	0.289	1,074	0.711	161	0.107	276	0.183
= 50 percent	1,345	451	0.335	894	0.665	248	0.184	203	0.151
> 50 percent	1,836	729	0.397	1,107	0.603	454	0.247	275	0.150
Difference (>50%) minus (< 50%)			0.108 *** (0.016)				0.141 *** (0.013)		-0.033 ** (0.013)
<i>D. By gender of first born child:</i>									
Female	2,216	652	0.294	1,564	0.706	281	0.127	371	0.167
Male	2,476	965	0.390	1,511	0.610	582	0.235	383	0.155
Difference male minus female			0.096 *** (0.014)				0.108 *** (0.011)		-0.013 *** (0.011)

Notes:

- The table presents family characteristics at the time of the chief executive officer (CEO) transition.
- CEO successions are classified into two groups: *family*, when the entering CEO is related by blood or marriage to the departing CEO, and *unrelated* otherwise. Family successions are further classified as *family—children* successions, when the entering CEO is the child of the departing executive, and *family—others* otherwise.
- In Panels (A) to (D), the share of family and unrelated successions are presented by alternative family characteristics of the departing CEOs: (A) the number of spouses, (B) the number of children, (C) the ratio of sons to the total number of children, and (D) the gender of the firstborn child.
- CEO successions data are from *Købmandsstandens Oplysningsbureau's* (KOB) dataset. Family characteristics data are from the Danish Civil Registration System.
- Standard errors are presented in parentheses. ***, **, and * denote significance at the 1, 5, and 10 percent levels, respectively.

TABLE III. FIRM AND FAMILY CHARACTERISTICS BY THE GENDER OF THE FIRST CHILD OF DEPARTING CEOs

Variable	Gender of First Child			
	All	Male	Female	Difference
	(I)	(II)	(III)	(IV)
Ln assets	8.638 (0.0255) [4,692]	8.617 (0.0352) [2,476]	8.662 (0.0369) [2,216]	-0.045 (0.0510)
Operating return on assets (OROA)	0.067 (0.0022) [4,692]	0.066 (0.0030) [2,476]	0.069 (0.0031) [2,216]	-0.003 (0.0043)
Net income to assets	0.035 (0.0020) [4,692]	0.033 (0.0028) [2,476]	0.037 (0.0029) [2,216]	-0.004 (0.0040)
Industry-adjusted OROA	-0.0003 (0.0021) [4,692]	-0.0028 (0.0030) [2,476]	0.0024 (0.0031) [2,216]	-0.0052 (0.0043)
Firm Age	19.247 (0.3175) [4,692]	19.307 (0.4370) [2,476]	19.180 (0.4621) [2,216]	0.127 (0.6361)
Number of children of departing CEO	2.236 (0.0127) [4,692]	2.240 (0.0175) [2,476]	2.231 (0.0184) [2,216]	0.009 (0.0253)
Departing CEO marital status is divorced	0.067 (0.0037) [4,692]	0.067 (0.0050) [2,476]	0.067 (0.0053) [2,216]	0.000 (0.0073)
Number of spouses of departing CEO	1.100 (0.0063) [4,692]	1.109 (0.0089) [2,476]	1.091 (0.0087) [2,216]	0.018 (0.0125)

Notes:

- The table presents firm and family characteristics at the time of the chief executive officer (CEO) transition.
- CEO successions are classified by the gender of the first child born to the departing CEO: *male* when the firstborn child is male and *female* when she is female. Firms where the departing CEO had no children are omitted.
- Ln assets* is the natural logarithm of the total book value of assets in Danish Kroner. OROA is the operating income (*Primært resultat*) to book value of assets. Net income to assets is the ratio of net income (*Årets resultat*) to book value of assets. Industry-adjusted OROA is the difference between OROA and the average of its four-digit NACE (European industry classification system) benchmark. Firm age is the difference between the year of CEO transition and the oldest of: the year of establishment, the year of registration, or the year of firms' bylaws. Number of children of departing CEO is the number of children registered in the Danish Civil Registration System. Departing CEO marital status is divorced is an indicator variable equal to one when the marital status of the departing CEO at the time of the transition is divorced, zero otherwise. Number of spouses of departing CEO is the number of different spouses registered in the Danish Civil Registration System that the departing CEO had had at the time of the CEO transition.
- Standard errors are in parentheses and the numbers of observations are in square brackets. ***, **, and * denote significance at the 1, 5, and 10 percent levels, respectively.

TABLE IV. CEO SUCCESSION DECISIONS AND FIRM PERFORMANCE AROUND CEO TRANSITIONS

Panel A. Dependent Variable: Industry-Adjusted Operating Return on Assets (OROA)				
	Type of Succession			Difference
	All	Family	Unrelated	
	(I)	(II)	(III)	(IV)
Before	-0.0032 (0.0016) [5,334]	0.0077 (0.0024) [1,776]	-0.0085 (0.0020) [3,558]	0.0162 *** (0.0031)
After	0.0053 (0.0016) [5,334]	0.0067 (0.0026) [1,776]	0.0046 (0.0020) [3,558]	0.0021 (0.0033)
Difference	0.0084 *** (0.0018)	-0.0010 (0.0028)	0.0132 *** (0.0023)	-0.0141 *** (0.0036)

Panel B. Alternative Dependent Variables (Difference-in-Differences (DD) analysis)				
Differences in	Type of Transition			Median DD
	Family	Unrelated	Mean Difference-in-Differences	
	(I)	(II)	(III)	(IV)
Operating return on assets (OROA)	-0.0120 *** (0.0028)	0.0035 (0.0023)	-0.0154 *** (0.0036)	-0.0082 *** (0.0027)
Industry-adjusted OROA	-0.0010 (0.0028)	0.0132 *** (0.0023)	-0.0141 *** (0.0036)	-0.0071 *** (0.0027)
Industry-and-performance-adjusted OROA	0.0009 (0.0027)	0.0107 *** (0.0021)	-0.0098 *** (0.0034)	-0.0066 *** (0.0025)
Industry-adjusted net income to assets	-0.0056 * (0.0029)	0.0064 *** (0.0022)	-0.0120 *** (0.0036)	-0.0060 *** (0.0023)
Ln assets	0.0092 *** (0.0022)	0.0300 *** (0.0019)	-0.0208 *** (0.0029)	-0.0050 *** (0.0019)
Ln sales	0.0003 (0.0059)	0.0216 *** (0.0038)	-0.0213 *** (0.0070)	-0.0057 ** (0.0025)

Notes:

- Chief executive officer (CEO) successions are classified into two groups: *family*, when the entering CEO is related by blood or marriage to the departing CEO, and *unrelated* otherwise.
- Panel A reports average industry-adjusted OROA before (three-year average) and after (three-year average) successions, and differences in these measures around CEO transitions. Panel B presents differences (differences-in-differences (DD)) around CEO transitions (and across succession groups) for the three-year averages of the following variables (I) OROA, (II) industry-adjusted OROA, (III) industry-and-performance-adjusted OROA, (IV) industry-adjusted net income to assets, (V) *ln* assets, and (VI) *ln* sales. In all cases, the year of succession is omitted.
- OROA, industry-adjusted OROA, industry-adjusted net income to assets and *Ln* assets are defined in Table III. *Ln sales* is the natural logarithm of sales in Danish Kroner. *Industry-and-performance-adjusted OROA* is the difference between OROA and the average of the firms in the same decile grouping of industry-adjusted OROA the year prior to succession.
- Standard errors are in parentheses and the numbers of observations are in square brackets. ***, **, and * denote significance at the 1, 5, and 10 percent levels, respectively.

TABLE V. GENDER OF THE FIRSTBORN CHILD, FAMILY SUCCESSIONS AND PERFORMANCE

Panel A. First Stage		Dependent Variable: Family CEO						
	(I)	(II)	(III)	(IV)	(V)	(VI)	(VII)	
Gender of the first born child is male	0.0955 *** (0.0138)	0.0404 ** (0.0171)			0.0955 *** (0.0136)	0.0927 *** (0.0135)	0.0936 *** (0.0135)	
Male child indicator variable		0.1162 *** (0.0191)						
Number of male children			0.0737 *** (0.0077)					
Ratio male to total children				0.1436 *** (0.0186)				
Ln assets					-0.0448 *** (0.0034)	-0.0515 *** (0.0036)	-0.0508 *** (0.0037)	
Firm age						0.0016 *** (0.0003)	0.0015 *** (0.0003)	
Industry-adjusted OROA t=-1						0.2446 *** (0.0445)		
Industry-and-performance-adjusted OROA, t=-1							0.3374 *** (0.0792)	
Year controls	No	No	No	No	Yes	Yes	Yes	
F-statistic	48.058	46.566	91.768	59.494	25.590	26.506	24.662	
Number of CEO transitions	4,692	4,692	4,692	4,692	4,692	4,692	4,692	

Panel B. Reduced Form		Dependent Variable: Differences in Operating Profitability around CEO Successions (three-year average post succession) - (three-year average pre-transition)						
	(I)	(II)	(III)	(IV)	(V)	(VI)	(VII)	
Gender of the first born child is male	-0.0120 *** (0.0038)	-0.0123 *** (0.0045)			-0.0121 *** (0.0038)	-0.0086 ** (0.0035)	-0.0083 ** (0.0034)	
Male child indicator variable		0.0006 (0.0054)						
Number of male children			-0.0045 ** (0.0022)					
Ratio male to total children				-0.0116 ** (0.0053)				
Ln assets					-0.0040 *** (0.0010)	-0.0027 *** (0.0010)	-0.0029 *** (0.0010)	
Firm age						-0.0000 (0.0001)	0.0000 (0.0001)	
Industry-adjusted OROA, t=-1						-0.3737 *** (0.0163)		
Industry-and-performance-adjusted OROA, t=-1							-0.4219 *** (0.0311)	
Year controls	No	No	No	No	Yes	Yes	Yes	
Number of CEO transitions	4,692	4,692	4,692	4,692	4,692	4,692	4,692	

Notes:

- In Panel A, the dependent variable is an indicator variable equal to one if the incoming chief executive officer (CEO) is related by blood or marriage to the departing CEO, zero otherwise. In Panel B, the dependent variable is the change in firm profitability around CEO transitions.
- In Panel B Columns (I)–(VI), firm profitability is defined as the industry-adjusted OROA. In Panel B Column (VII), firm profitability is defined as industry-and-performance-adjusted OROA. Changes in profitability are computed as the difference between the average, three-year post-succession profitability minus the three-year average before transition. The year of succession is omitted.
- Gender of the firstborn child is male is an indicator variable equal to one if the firstborn child of the departing CEO is male, zero if she is female. Male child indicator variable is an indicator variable equal to one if the departing CEO has at least one male child, zero otherwise. Number of male children is the number of departing CEO's male children registered at the time of transition. Ratio of male to total children is the ratio of the number of departing CEO's sons to total number of children. Ln assets, firm age, and industry-adjusted OROA are defined in Table III. Industry-and-performance-adjusted OROA is defined in Table IV.
- Robust standard errors are in parentheses. ***, **, and * denote significance at the 1, 5, and 10 percent levels, respectively.

TABLE VI. FIRM PERFORMANCE AND FAMILY SUCCESSIONS: OLS AND INSTRUMENTAL VARIABLES

Dependent Variable: Differences in Operating Profitability around CEO Successions (three-year average post succession) - (three-year average pre-transition)								
	OLS		IV-2SLS					
	(I)	(II)	(III)	(IV)	(V)	(VI)	(VII)	(VIII)
Family CEO	-0.0142 *** (0.0038)	-0.0079 ** (0.0036)	-0.1260 *** (0.0429)	-0.0722 ** (0.0317)	-0.0606 ** (0.0298)	-0.0808 ** (0.0383)	-0.0928 ** (0.0393)	-0.0886 ** (0.0384)
Ln assets		-0.0030 *** (0.0010)					-0.0074 *** (0.0023)	-0.0074 *** (0.0022)
Firm age		0.0000 (0.0001)					0.0001 (0.0001)	0.0002 (0.0001)
Industry-adjusted OROA, t=-1		-0.3727 *** (0.0164)					-0.3510 *** (0.0198)	
Industry-and-performance-adjusted OROA, t=-1								-0.3920 *** (0.0350)
Year controls	No	Yes	No	No	No	No	Yes	Yes
Number of CEO transitions	4,692	4,692	4,692	4,692	4,692	4,692	4,692	4,692
Instrumental variables								
Gender of the first child			√	√			√	√
Male child indicator variable				√				
Number of male children					√			
Ratio male to total children						√		

Notes:

- Estimated coefficients in Columns (I) and (II) are from least squares regressions. Estimated coefficients in Columns (III)–(VIII) are from IV-2SLS regressions.
- In Columns (I)–(VII) the dependent variable is the change in industry-adjusted OROA around CEO successions as defined in Table V. In Column (VIII) the dependent variable is the change in industry-and-performance-adjusted OROA around CEO successions as defined in table V.
- Family CEO, the instrumented variable, is defined in Table V. Depending on the specification, as indicated above, the instrumental variables are: gender of the firstborn child of a departing CEO (1 = male, 0 = female), male child indicator variable (1 = departing CEO has at least one son at the time of succession, 0 = otherwise), number of male children of the departing CEO, and ratio of male to total number of children of the departing CEO. Other control variables are defined in Tables III and IV.
- Robust standard errors are in parentheses. ***, **, and * denote significance at the 1, 5, and 10 percent levels, respectively.