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# The Origins and Real Effects of the Gender Gap: Evidence from CEOs' Formative Years

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# Motivation

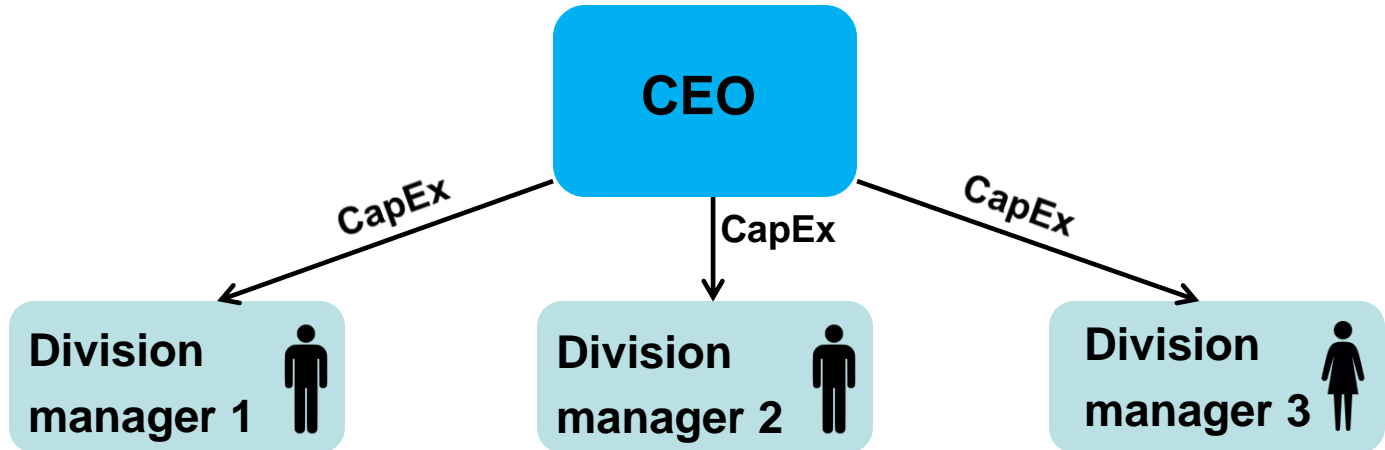
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- Academic and policy debate
  - Evidence that women get fewer resources (pay, promotion, etc.) than men
  - Extensive policy efforts to bridge the gap
  
- **Open questions → this paper**
  1. What are the origins of the gender gap?
    - Statistical discrimination → fundamentals correlated with gender
    - Subjective **managerial preferences**
  
  2. What are the real effects on the firm?
    - Capital investment
    - Performance

Challenge: Preferences, resource allocations & performance are **hard to observe**

# Empirical Setting

- Allocation of investment capital to male and female division managers and their professional appointments in conglomerates



- Centralized decision agent → **CEO**
  - Division manager → 2<sup>nd</sup> most important factor after NPV
- } Graham, Harvey, Puri (2015)
- One-to-one correspondence** between a manager and division
  - Capital allocations, appointments, and outcomes are observable

# Eliciting CEOs' Preferences

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- Foundation: social learning theory (Mischel 1966; Bandura 1977, 1986)
  - Individuals form gender attitudes at an early age by observing the **roles of men and women in their immediate surrounding** → family, community, and school
  - Validated in over 180 studies in psychology and social economics
- Focus: CEO's exposure to gender imbalances in **formative years**
  - Mostly exogenous at a young age → youth to early parenthood
- Sources of variation:
  - **Family** → employment & edu balance between the parents and the parenting of daughters vs. sons
  - **Community** → local gender gap in wages, employment, edu
  - **Education** → single-gender vs. mixed gender schooling

# Main Findings

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## ▪ Resource allocation

- Female division managers obtain 50-70 bps **less CapEx** than males with similar characteristics and are appointed to peripheral, non-core divisions
- **The gap nearly disappears** for male CEOs with early-life exposure to gender equity

## ▪ Which CEO characteristics matter?

- **Familial factors** most important
- Community effects matter on their own, but are subsumed by family characteristics

## ▪ Governance

- Effect **specific to CEO** → within-firm variation from CEO turnovers
- Gender gap attenuated in the presence of a female board chair

## ▪ Performance

- Gender effects in CapEx erode investment efficiency and performance

One of the first to investigate the **family background** of U.S. CEOs

A novel link between exposure to gender equity and financial policy

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# **1. Identifying CEOs' Family Descent and Formative Experiences**

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# CEO Background

## 1. CEO edu & career

**Source:** Execucomp and Boardex

**Data:** managers' names, year of birth, and career progression

**Source:** High school yrbooks

**Data:** HS location, single gender or co-ed

**Source:** Dept of Education

**Data:** fraction of females in college, year of going co-ed

**596 CEOs**

Nearly all male (98.5%)

## 2. Family background

**Source:** Lexis Public Records

**Data:** date of birth, SSN state, SSN (5 digits), spouse, residential addresses, real estate property transactions

**Step 1: Birth records**

**Data:** place of birth, parents

**Step 2: Marriage records**

**Data:** parents

**Step 3: Death records**

**Data:** parents and siblings

**Next:** illustrations of the main types of records

## 3. Family details

**Source:** Nat'l Archives

**Individual household census records**

41 standardized household attributes

**Source:** Archives of white page directories

**Home address and occupations** of both parents

# Family Data: Birth Records

Manager's full name + date of birth (Lexis Nexis Public records) → state birth record → **identify parents**

1. PLACE OF BIRTH  
STATE OF TEXAS

TEXAS DEPARTMENT OF HEALTH  
BUREAU OF VITAL STATISTICS  
STANDARD CERTIFICATE OF BIRTH

COUNTY OF Travis

CITY OR PRECINCT NO. Austin

2. FULL NAME OF CHILD  
**ROBERT LYNN WALTRIP**

3. SEX Male

4. TWIN, TRIPLET, OTHER

5. NUMBER IN ORDER OF BIRTH

6. LEGITIMATE? Yes

7. DATE OF BIRTH January 10, 1931

8. FULL NAME  
FATHER: **Robert Elsmere Waltrip**  
MOTHER: **Wanda Ivey Abbett**

9. POSTOFFICE ADDRESS  
Houston, Texas

10. COLOR OR RACE White

11. AGE 32 (YEARS)

12. BIRTHPLACE (STATE OR COUNTRY) Oakwood, Texas

13. TRADE, PROFESSION OR KIND OF WORK DONE  
Funeral director  
BUSINESS IN WHICH ENGAGED Funeral home owner

14. FULL MAIDEN NAME  
**Wanda Ivey Abbett**

15. POSTOFFICE ADDRESS  
Houston, Texas

16. COLOR OR RACE White

17. AGE 27 (YEARS)

18. BIRTHPLACE (STATE OR COUNTRY) McMahon, Texas

19. TRADE, PROFESSION OR KIND OF WORK DONE  
Housewife  
BUSINESS IN WHICH ENGAGED

20. NUMBER OF CHILDREN BORN TO THIS MOTHER INCLUDING THIS BIRTH

21. NUMBER OF CHILDREN BORN TO THIS MOTHER AND NOW LIVING

SIGNATURE OF INFORMANT R. E. Waltrip

22. MEDICAL ATTENDANCE

I HEREBY CERTIFY ~~that~~ <sup>to</sup> THE BIRTH OF THIS CHILD ~~BORN ALIVE~~ <sup>BORN ALIVE</sup> AT Houston M. ON THE ABOVE DATE.

AND THE PROPHYLACTIC USED TO PREVENT OPHTHALMIA NEONATORUM WAS \_\_\_\_\_

DATE 1944 SIGNATURE R. W. Waltrip POSTOFFICE ADDRESS Houston TEXAS

23. FILE NUMBER FILE DATE SIGNATURE OF STATE REGISTRAR POSTOFFICE ADDRESS  
June 27 1944 M. D. Austin TEXAS

NOTE THE INFORMATION CALLED FOR ON THE REVERSE SIDE

8827

Identify CEO's parents

Parents' occupations



# Family Data: Marriage Records

Example: Norman Allen Scher, CEO of Tredegar

30M — 4-60

MARGIN RESERVED FOR BINDING  
The minister or other person celebrating this marriage is required within five days to fill out and sign both copies of the Certificate of Date and Place of Marriage, and deliver them to the clerk who issued the license. The copy with the license on the back is for the clerk, the other for the Bureau of Vital Statistics.

V. S. 77

13440  
A-COP1  
CLERK'S NO.

CITY City of Richmond CERTIFICATE OF MARRIAGE  
COUNTY OF \_\_\_\_\_ COMMONWEALTH OF VIRGINIA

FULL NAME OF GROOM Norman Allen Scher

PRESENT NAME OF BRIDE Joyce Ann Slavin MAIDEN NAME \_\_\_\_\_

GROOM				BRIDE			
AGE	RACE	SINGLE, WIDOWED, OR DIVORCED	NO. TIMES PREV. MARRIED	AGE	RACE	SINGLE, WIDOWED, OR DIVORCED	NO. TIMES PREV. MARRIED
23	Wh	single		21	Wh	single	

OCCUPATION Law Student INDUSTRY OR BUSINESS \_\_\_\_\_ OCCUPATION None INDUSTRY OR BUSINESS \_\_\_\_\_

BIRTHPLACE Richmond, Va

FATHER'S FULL NAME Charles Scher FATHER'S FULL NAME Cyrus L. Slavin

MOTHER'S MAIDEN NAME Sonia Goldstein MOTHER'S MAIDEN NAME Ethel Shull

RESIDENCE: CITY OR COUNTY MAILING ADDRESS Charlottesville, Va RESIDENCE: CITY OR COUNTY MAILING ADDRESS 3211 Monument Ave

Proposed Date of Marriage June 11, 1961 Proposed Place of Marriage Richmond, Va

Given under my hand this 9th day of June, 1961  
[Signature], Clerk of Hustings Court.

CERTIFICATE OF DATE AND PLACE OF MARRIAGE

I, Just Melton, a Rabbi of the Jews Church, (Denomination)  
or religious order of that name, do hereby certify that on the 11 day of June 1961, in the county, city, or town of Richmond, Virginia, under authority of this license I joined together in the Holy State of Matrimony the persons named and described therein. I qualified and gave bond in the county or city of Richmond, year 1951, which authorizes me to celebrate the rites of marriage in the Commonwealth of Virginia.

Given under my hand this 13 day of June, 1961.  
Address of celebrant 4114 Casby Dr Ave Rabbi Just Melton  
(Person who performs ceremony sign here.)

Identify CEO's parents

# Family Data: Individual Census Records

This report is prepared by Act of Congress. This Act makes it unlawful for the Bureau to disclose any facts, including names or identity, from your census reports. Only sworn census employees will see your statements. Data collected will be used solely for preparing statistical tabulations concerning the Nation's population, resources, and business activities.

16-502A

State Virginia Incorporated place WMA Ward of city Northampton Unincorporated place Northampton U.S. DEPARTMENT OF COMMERCE—BUREAU OF THE CENSUS S. D. No. 10 E. D. No. 44-31A Sheet No. 20 B  
 County Henrico Township or other division of county Lynchburg Dist. Block No. 1 Institution (Name of institution and lines on which entries are made) SIXTEENTH CENSUS OF THE UNITED STATES: 1940 POPULATION SCHEDULE Enumerated by me on April 29, 1940. Hunter W. Martin Enumerator.

Line No.	HOUSEHOLD DATA						NAME	RELATION	PERSONAL DESCRIPTION	EDUCATION				PLACE OF BIRTH	CITIZENSHIP	RESIDENCE, APRIL 1, 1940										PERSONS 14 YEARS OLD AND OVER—EMPLOYMENT STATUS														
	1	2	3	4	5	6				7	8	9	10			11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	
43	307	431	0	15,000			Sider, Charles	Head	M	W	38	M	16	H	9	New Jersey	57	Some place	X003	yes	-	-	-	-	1	60	Mail	private mail	PU	520	16	52	468	No	41					
44							Sonia	Wife	F	W	34	M	16	H	10	Russia	18	Some place	X003	No	No	No	No	H	5									0	No	42				
45							Norman Allen	Son	M	W	2	S	16	0	Virginia	24																				43				
46							Lucille Lee	Daughter	F	W	7	M	16	9	4	New York	56	Some place	X003	yes	-	-	-	-	1	60	Mail	private family	PU	520	16	52	468	No	44					
47							James James	Butler	M	W	23	M	16	7	7	Virginia	74	Some place	X003	yes	-	-	-	-	1	60	Butler	private family	PU	520	16	52	468	No	45					
51							Bertha M.	Wife	F	W	43	M	16	H	9	New Jersey	57	Apprentice	X003	yes	-	-	-	-	1	60								0	No	51				
52	301	433	0	15,000			Johnson, Albert S.	Head	M	W	49	M	16	H	30	Virginia	74	Some place	X003	yes	-	-	-	-	1	40	Optician	self	PU	376	60	52	4000	No	52					
53							Centred A.	Wife	F	W	50	M	16	H	30	Virginia	74	Some place	X003	No	No	No	No	H	5										0	No	53			
54							Grace	Daughter	F	W	20	S	16	4	30	Virginia	74	Some place	X003	yes	-	-	-	-	1	44	Black	App. Leg. firm	PU	360	53	52	720	No	54					
55	304	434	0	15,000			Speaks, Charlotte	Head	F	W	60	M	16	H	33	Massachusetts	53	Some place	X003	No	No	No	No	H	5										0	Yes	55			
56							Margie Frances	Daughter	F	W	26	S	16	5	30	Virginia	74	Some place	X003	yes	-	-	-	-	1	44	Social worker	Home Society	PU	440	44	52	1620	No	56					
57							John Robinson	Son	M	W	21	S	16	4	4	Virginia	74	Some place	X003	No	No	No	No	S	6										0	No	57			
58							Arthur Florence	Mail	F	W	19	S	16	5	5	Virginia	74	Some place	X003	yes	-	-	-	-	1	60	Mail	private family	PU	300	50	52	312	No	58					
59	308	435	0	18,000			Orange, Frank W.	Head	M	W	39	M	16	8	8	Virginia	74	Some place	X003	yes	-	-	-	-	1	44	Investments	Investment	E	160	16	52	5000+	Yes	59					
60							Anna M.	Wife	F	W	32	M	16	5	20	No Carolina	76	Some place	X003	No	No	No	No	H	5											0	No	60		
61							Anna P.	Daughter	F	W	7	S	16	3	2	Virginia	74	Some place	X003	yes	-	-	-	-													0	No	61	
62							Mary W.	Daughter	F	W	5	S	16	0	0	Virginia	74	Some place	X003	yes	-	-	-	-													0	No	62	
63							Rebecca S.	Daughter	F	W	1	S	16	0	0	Virginia	74	Some place	X003	yes	-	-	-	-														0	No	63
64							Waddy, James A.	Daughter	F	W	60	S	16	7	7	Virginia	74	Some place	X003	yes	-	-	-	-	1	60	Mail	private home	PU	300	16	52	510	No	64					
65	310	436	0	17,000			Traynor, Lawrence P.	Head	M	W	45	M	16	H	30	Virginia	74	Some place	X003	yes	-	-	-	-	1	44	Special agent	Insurance	PU	218	50	52	4200	No	65					
66							Ray W.	Wife	F	W	43	M	16	H	30	Virginia	63	Some place	X003	No	No	No	No	H	5												0	No	66	
67	312	437	0	15,000			Wardner, William R.	Head	M	W	38	M	16	H	35	Virginia	74	Some place	X003	yes	-	-	-	-	1	54	Salesman	Insurance	PU	270	50	51	4400	No	67					
68							Virginia O.	Wife	F	W	33	M	16	H	30	Virginia	74	Some place	X003	No	No	No	No	H	5												0	Yes	68	
69							Anna B.	Daughter	F	W	7	S	16	1	1	Virginia	74	Some place	X003	yes	-	-	-	-														0	No	69
70							Wm R, Jr.	Son	M	W	5	S	16	0	0	Virginia	74	Some place	X003	yes	-	-	-	-														0	No	70
71	314	438	0	16,000			Adkin, Albert	Head	M	W	40	M	16	H	30	New York	56	Some place	X003	yes	-	-	-	-	1	50	Merchant	Clothing	PU	100	60	52	5000+	Yes	71					
72							Ester	Wife	F	W	37	M	16	2	25	Virginia	74	Some place	X003	yes	-	-	-	-	1	30	Buyer	Stalling store	PU	200	60	51	5000+	Yes	72					
73							Royane Lee	Daughter	F	W	15	S	16	12	18	Virginia	74	Some place	X003	No	No	No	No	S	6													0	No	73
74							Frederic B.	Son	M	W	1	S	16	0	0	Virginia	74	Some place	X003	yes	-	-	-	-														0	No	74
75							Clark, Mary	Daughter	F	W	32	S	16	2	2	Virginia	62	R.	X003	yes	-	-	-	-	1	60	Teacher	Private family	PU	100	50	0	0	No	75					
76	318	439	0	15,600			Hughes, Jack M.	Head	M	W	42	M	16	H	10	Alabama	82	Some place	X003	yes	-	-	-	-	1	48	Swig + Dress	Auto Sales	PU	150	69	52	3000	Yes	76					
77							Ches	Wife	F	W	42	M	16	23	20	Virginia	74	Some place	X003	No	No	No	No	H	5												0	No	77	
78							Marie D.	Daughter	F	W	16	S	16	13	20	Virginia	74	Some place	X003	No	No	No	No	S	6												0	No	78	
79							John A.	Son	M	W	13	S	16	7	7	Virginia	74	Some place	X003	yes	-	-	-	-													0	No	79	
80	320	440	0	14,000			Berkley, George F.	Head	M	W	53	M	16	24	10	Virginia	74	Some place	X003	yes	-	-	-	-	1	39	Auto Salesman	Telephone Co.	PU	100	50	52	5000+	Yes	80					

Household where the CEO grew up

Survey done

# Family Variables

## Example: Norman Allen Scher, CEO of Tredegar

NAME Name of each person whose usual place of residence on April 1, 1940, was in this household.	RELATION Relationship of this person to the head of the household, as wife, daughter, father, mother-in-law, grandson, lodger, lodger's wife, servant, hired hand, etc.	PERSONAL DESCRIPTION					EDUCATION		OCCUPATION Trade, profession, or particular kind of work, as - Frame spinner Salesman Laborer Rivet heater Music teacher...	INDUSTRY Industry or business, as - Cotton mill Retail grocery Farm Shipyards Public school	INCOME	
		CODE (Leave Blank)	Sex	Color or Race	Age at Last Birthday	Marital Status	Attended school or college at any time since March 1, 1940?	Highest grade of school completed				
Scher, Charles	Head	0	M	W	38	M	No	H-1	9	Manager	Small loan	5000+
—, Sonia	Wife	1	F	W	34	M	No	H-2	10			0
—, Norman Allen	Son	2	M	W	2	S	No	0				
Zwales, Lena	Maid	7	M	Neg	27	M	No	9	9	Maid	Private family	468
Zwales, James	Butler	7	M	Neg	23	M	No	7	7	Butler	Private family	468

### Data on CEO's family:

- Each parent's employment status and occupation
- Years of education and annual outside income
- Residential address and neighbors → **community variables**

Data on div. managers:

1,788 managers

## James B. Stake

4617 Edina Blvd, Minneapolis, MN 55424  
333 Coast Blvd, La Jolla, CA 92037



<b>Education</b>	University of Pennsylvania, MBA in Finance, 1979 Purdue University, BS in Mechanical Engineering, 1974
<b>Experience</b>	<b>3M Co.</b> Executive VP, Precision Optics Division, 01/2007 – 12/2008 Executive VP, Display & Graphics Division, 01/2002 – 12/2006 VP, Industrial Tape & Specialties Division, 01/2000 – 01/2002
<b>Board Memberships</b>	Otter Tail Corporation (NASDAQ: OTTR), CH Robinson Worldwide (NASDAQ: CHRW), Ativa Medical Inc (private)
<b>Club memberships</b>	White Bear Yacht Club, since 04/1992 Minneapolis Club, since 02/1998 Hazeltine National Golf Club, since 04/1996
<b>Philanthropy</b>	Twin Cities Public Television (Trustee) American Road and Transportation Association (Director)
<b>Personal</b>	Age: 59, Married to Miriam M. Stake

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## **2. Which Families Do CEOs Come From?**

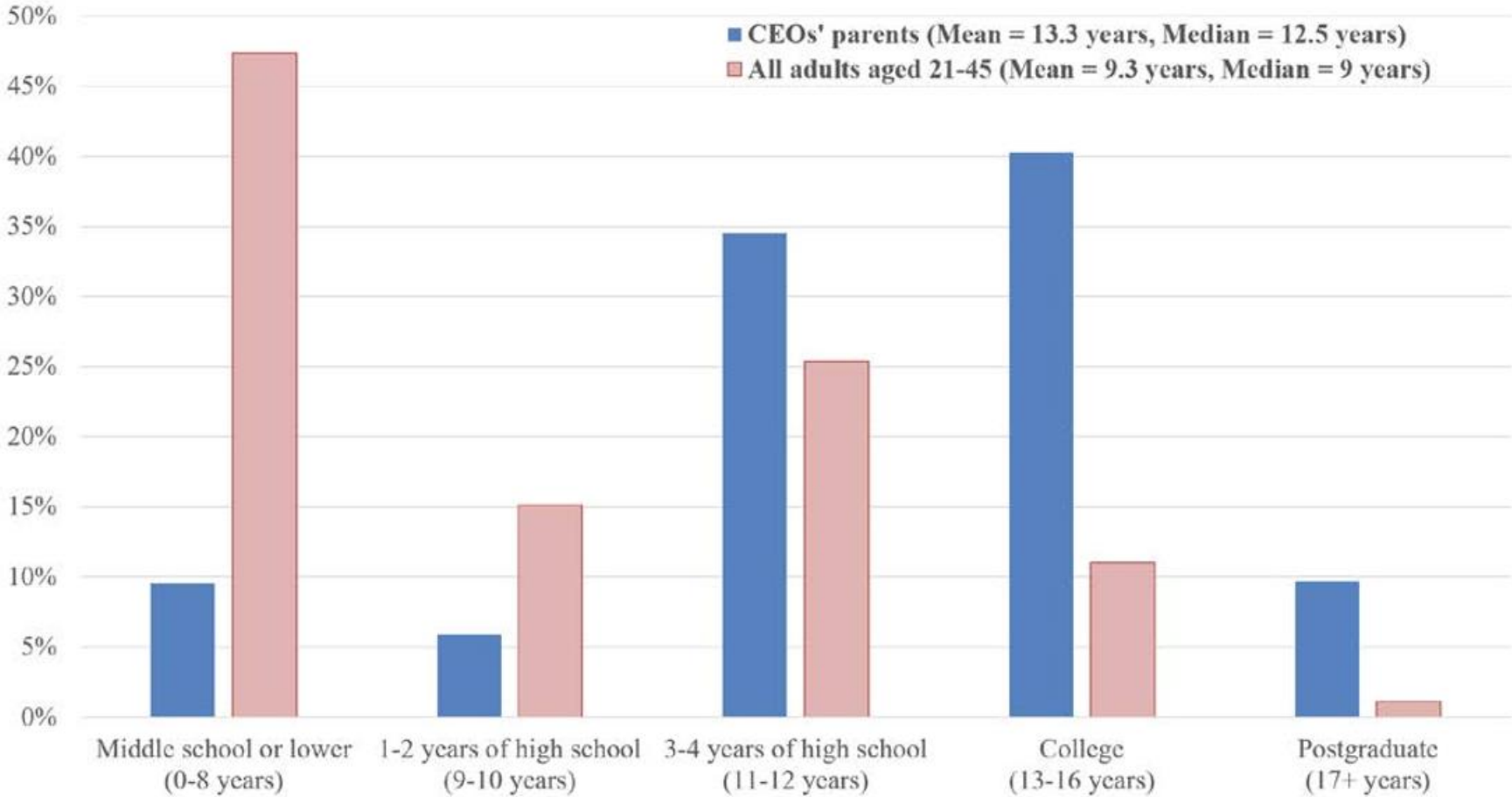
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# Families Where CEOs Grew Up

Characteristic	CEOs' Parents	General population	National Percentile
Father income (2016 dollars)	\$91,545	\$40,560	74.7
Mother income (2016 dollars)	\$40,155	\$35,620	57.7
Working mother, indicator	0.21	0.36	32.7
Home value (2016 dollars)	\$654,000	\$312,000	79.8
Number of servants	0.14	0.02	93.0

1. Ave. CEO comes from a family with income & wealth in the **75-80% percentile**
2. The income gap between CEOs' parents exceeds that in the population
3. CEOs' **mothers more likely to stay at home** than women in the population
4. CEOs more likely to grow up with **(female) servants**

# Education Characteristics



CEOs' parents have **4 more years of education** than the general population

**16%** of CEOs attend **all-male high schools** and **10%** attend **all-male colleges**

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### **3. Capital Allocation to Male & Female Managers**

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# Allocation of Capital to Male and Female Managers

Dep. variable: **Division CapEx (as a ratio to assets)**

<b>Female division manager</b>	<b>-0.005**</b> [2.218]	<b>-0.005***</b> [3.463]	<b>-0.007***</b> [3.709]
<b>Tenure at the firm</b>	<b>0.005***</b> [2.617]	<b>0.004*</b> [1.889]	<b>0.002</b> [0.799]
<b>Performance record</b>	<b>0.004**</b> [2.229]	<b>0.002*</b> [1.749]	<b>0.004**</b> [2.160]
<b>Social ties to CEO</b>	<b>0.009***</b> [2.911]	<b>0.012***</b> [2.853]	<b>0.011***</b> [2.892]
<b>Graduate degree</b>	<b>0.001</b> [0.136]	<b>0.001</b> [0.272]	<b>0.002</b> [0.661]
<b>Board member</b>	<b>0.004</b> [1.205]	<b>0.002</b> [0.637]	<b>0.001</b> [0.105]
<b>Age</b>	<b>0.001</b> [1.090]	<b>0.001</b> [0.040]	<b>0.001</b> [1.005]

Female managers receive about **50-70 basis points** less in annual CapEx

For the average division, this difference amounts to **9-12%** of the annual investment budget

<b>Division controls</b>	Industry Tobin's Q, ROA, size, core division indicator		
<b>Firm controls</b>	Size, ROA, EPS, number of divisions, Tobin's Q		
<b>CEO controls</b>	Age, external board seats, tenure with firm, graduate degree, network size		
<b>Fixed effects</b>	Year	Year, industry	Year, industry, firm
<b>Adjusted R<sup>2</sup></b>	0.062	0.294	0.575

# The Effect of CEO's Formative Years

Dep. Variable = Division CapEx

Female division manager	-0.003 [1.473]	-0.003* [1.819]	-0.004** [2.072]	-0.002 [1.320]
CEO family index		0.004** [2.296]		0.004** [2.418]
Female division manager x CEO family index		-0.004** [2.163]		-0.004** [2.226]
CEO education index		0.003** [2.049]		0.003* [1.903]
Female division manager x CEO education index		-0.004** [2.303]		-0.004** [2.447]
CEO community index			0.004* [1.883]	0.003 [1.461]
Female division manager x CEO community index			-0.004* [1.735]	-0.001 [1.466]
Controls	Yes	Yes	Yes	Yes
Year, industry	Yes	Yes	Yes	Yes
Adjusted R <sup>2</sup>	0.584	0.580	0.578	0.592

CEOs' formative experiences explain **70+% of the gap**

CEOs who grew up in **male-dominated environments** allocate less capital to female managers

Effects identified from **CEO changes** within a firm

**Family** and **education** factors have a stronger effect and drive out the influence of community characteristics

# Robustness: CEO & Manager Fixed Effects

Dep. Variable = Division CapEx

Female division manager	-0.296*	-0.118*	
	[1.908]	[1.702]	
CEO Gender Imbalance Index	0.398**		
	[2.515]		
<b>Female division manager x CEO Gender Imbal. index</b>	<b>-0.481**</b>	<b>-0.312**</b>	<b>-0.236**</b>
	[2.089]	[2.025]	[2.099]
Controls	Yes	Yes	Yes
Year, industry, firm F.E.	Yes	Yes	Yes
<b>CEO * Firm F.E.</b>	No	Yes	Yes
<b>Division Manager F.E.</b>	No	No	Yes
Adjusted R <sup>2</sup>	0.597	0.619	0.718

1. Robust to holding constant **CEO-firm matches**
2. Robust to controlling for time-invariant **division managers' characteristics**

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## 4. Economic Mechanisms:

i. The **appointment** channel

ii. The **capital allocation** channel

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# Economic Channels

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- Two complimentary, non-mutually exclusive channels:
  - Appointment to divisions
  - Capital allocation, holding the appointment constant
- **The appointment channel**
  - To which divisions are female managers appointed?  
→ study the **appointments of division managers**
  - Evidence: female managers are appointed to non-core, less profitable divisions that historically receive less capital
- **The capital allocation channel**
  - Exploit **CEO turnover**, where the assignment of managers to divisions is inherited from the prior CEO and remains constant in the short term

# The Capital Allocation Channel

Exploit CEO turnovers: shock CEO characteristics at the time of CEO turnover, while holding constant managers' assignments to divisions

Dependent variable:  $\Delta\text{CapEx}$

Female division manager	0.005 [0.805]	-0.004 [0.674]	0.001 [0.417]
$\Delta\text{CEO}$ family index	0.013* [1.753]		
<b>Female division manager x <math>\Delta\text{CEO}</math> family index</b>	<b>-0.023*</b> [1.883]		
$\Delta\text{CEO}$ education index		0.017** [0.539]	
<b>Female division manager x <math>\Delta\text{CEO}</math> education index</b>		<b>-0.028**</b> [2.267]	
$\Delta\text{CEO}$ community index			0.015* [1.680]
<b>Female division manager x <math>\Delta\text{CEO}</math> community index</b>			<b>-0.023**</b> [1.994]
Controls	Yes	Yes	Yes
Year, industry, and firm F.E.	Yes	Yes	Yes
Adj. R <sup>2</sup>	0.753	0.757	0.755

Holding **division managers constant**, a new CEO from a male-dominated background reduces CapEx to “inherited” female managers

During CEO turnovers, the characteristics of division managers remain constant  
 → effect unlikely to be explained by an **omitted variable correlated with gender**

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## **5. Possible Explanations**

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# Possible Explanations

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- Statistical discrimination: females are allocated less capital because of economic fundamentals which are important for CapEx
- Taste-based CEO preferences: lower CapEx allocations reflect CEO's personal biases, whether conscious or unconscious
- Test 1: comparison of male and female division managers
  - Evidence: male and female managers are statistically indistinguishable on observable characteristics of education, experience, and historical record
- Test 2: CEO monitoring
  - If a personal CEO bias, it should shrink in the presence of strong monitoring
  - Evidence: the effect of CEOs' formative gender experiences on CapEx is reduced by 29-40% in the presence of a **female chair of the board**
- Test 3: external assessment of CEO's policies to women
  - Obtain independent scores of gender policies for each CEO (KLD analytics)



# External Assessment of CEO Policies

Test for correlation with an external assessment of CEO policies towards female employees

Source: audit scores by KLD Research and Analytics

Dep. Variable = Audit Scores of Policies toward Females

	Promotion of women and minorities			Work/life benefits			Women & Minority contracting		
	Family	Edu	Community	Family	Edu	Community	Family	Edu	Community
<b>CEO background index</b>	-0.372*** [2.766]	-0.084 [1.069]	-0.102** [2.131]	-0.323** [2.420]	-0.141 [1.163]	-0.154** [2.087]	-0.212** [2.010]	-0.154* [1.767]	-0.078** [2.460]
Controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Year and industry F.E.	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Adj. R <sup>2</sup>	0.200	0.203	0.208	0.181	0.159	0.163	0.129	0.139	0.136

CEO's formative gender experiences are correlated with the promotion of women and the allocation of contracts to women → extend beyond CapEx

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## **6. Real Effects**

- **Investment Efficiency**
  - **Performance**
-

# Investment Efficiency: Sensitivity of CapEx to Q

	Dep. Variable = Division CapEx		
Index type	Family	Education	Community
CEO imbalance index	-0.036** [2.051]	-0.014* [1.759]	-0.028* [1.855]
Tobin's Q	0.010** [2.355]	0.008** [2.229]	0.007** [2.148]
<b>CEO imbalance index x Tobin's Q</b>	<b>-0.006* [1.860]</b>	<b>-0.004* [1.735]</b>	<b>-0.005 [1.364]</b>
Year, Industry, and firm fixed effects	Yes	Yes	Yes
Adj. R <sup>2</sup>	0.328	0.323	0.331

The effect of CEO background on the allocation of capital dampens the sensitivity of investment to the marginal product of capital

# Firm Performance

Dependent Variable	ROA	Tobin's Q	Stock returns	ROA	Tobin's Q	Stock returns
CEO imbalance index	-0.003** [2.386]	-0.121** [2.266]	-0.010** [2.174]	-0.001 [1.226]	-0.033 [1.485]	-0.004 [0.719]
Female Division Manager				0.008 [0.993]	0.020 [1.118]	0.002 [0.881]
CEO imbalance index x Female Div. Manager				-0.004** [2.293]	-0.106** [2.317]	-0.008** [2.064]
Industry fixed effects	Yes	Yes	Yes	Yes	Yes	Yes
Year fixed effects	Yes	Yes	Yes	Yes	Yes	Yes
Firm fixed effects	Yes	Yes	Yes	Yes	Yes	Yes
Adj. R <sup>2</sup>	0.456	0.794	0.395	0.472	0.806	0.415

1. CEO exposure to gender imbalances is negatively correlated with firm performance
2. This effect operates when there are female division managers

# Conclusion

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- The gender gap in resource allocation is linked to CEO preferences, which can be traced to formative years
- Family background and early education have significant real effects

→ First evidence on the family background of U.S. CEOs and its role in resource allocation inside the firm

# Managerial Labor Market

Dependent variable	Separation of division managers	Promotion of division managers	Demotion of division managers
Female division manager	0.082 [1.114]	-0.022 [1.360]	0.037 [0.918]
CEO imbalance index	0.029* [1.902]	0.058** [2.185]	0.016* [1.885]
CEO imbalance index x Female division manager	0.115** [2.266]	-0.046* [1.725]	0.073* [1.847]
Controls	Yes	Yes	Yes
Industry fixed effects	Yes	Yes	Yes
Year fixed effects	Yes	Yes	Yes
Firm fixed effects	Yes	Yes	Yes
Adj. R <sup>2</sup>	0.117	0.088	0.094

Female division managers are **more likely to separate** from the firm and **less likely to be promoted** under CEOs with conservative backgrounds

# Appendix: Division Performance

Division Performance measure	Cash flow/sales	Sales growth
Model	(1)	(3)
Female division manager	-0.018 [1.491]	0.042 [1.470]
CEO gender imbalance index	-0.032 [1.083]	-0.084 [0.832]
CEO gender imbalance index x Female division manager	-0.009** [2.033]	-0.032* [1.927]
Controls	Yes	Yes
Year fixed effects	Yes	Yes
Industry fixed effects	Yes	Yes
Firm fixed effects	Yes	Yes
R <sup>2</sup>	0.260	0.085

The reduction in investment efficiency is associated with a decline in operating performance