Learning the ropes? Executive experience and location choices of multinational firms

Baptiste Souillard[1]

[1] *ECARES, SBS-EM, Université libre de Bruxelles*

Seminars in Economic Geography – UCLA and UCD

October 7, 2020

Motivation

What makes firms invest in foreign countries?

- Attracting **foreign direct investments** (FDI) is a top priority for many governments
- A literature shows that many factors stimulate FDI: e.g., technology, size, and institutions (Blonigen and Piger, 2014)
- In parallel, another strand of research documents the role played by **management practices** in **firm performance** (Bloom and Van Reenen, 2011; Lazear and Oyer, 2012)
- Anecdotal evidence suggests that **executives** are key to firm performance in **international markets**...

  > "*Hans-Peter Kuhnert and Koichiro Fukumoto are important appointments for Black Box as they bring extensive experience and add the necessary leadership that will help [the firm] to accelerate sales growth [and more specifically] to drive sales growth for the key Europe Middle East and Africa region and Japanese markets.*" (source: Business Wire)

  ... but systematic evidence is still scarce

What I do in this paper

- I build a rich database on S&P 1500 companies'
  - **subsidiaries** (across countries and over time)
  - **executives** (tracked across firms and over time)
- I investigate the effect of **executive experience in managing foreign operations** on firm international activities
- The analysis is conducted at the **firm** $\times$ **country** $\times$ **year** level
- More precisely, I perform an **event study** to quantify the impact of **recruiting an executive having experience with a specific country** on the **firm's presence in this country**

Overview of the results

- The results point to a **positive effect** of executive experience on firm presence overseas
- Hiring an executive who has worked for a company that had at least one subsidiary in country *c* at the time increases the **firm's probability to enter** country *c* by **7 percent**
- The effect is **robust** across specifications and **causal** (placebo test, instrumental variables, "unanticipated" movements of executives as exogenous shocks, US conferral of the Permanent Normal Trade Relations (PNTR) status on China as a quasi-natural experiment)
- Additional findings:
  - only country-specific experience is relevant
  - stronger effect for CEOs, CFOs, CMOs, and COOs
  - similar pattern at the intensive margin
  - wage premium for executives used to manage multinational operations
  - conclusions hold for tax havens → crucial policy implications for profit shifting

Related literature and contributions

- **Determinants of FDI** (e.g., Antràs and Yeaple, 2014; Blonigen and Piger, 2014)
  - Most of the determinants hitherto uncovered are country- and firm-specific and firms are generally treated as black-box entities
- **Management and firm performance in international markets** (e.g., Mion and Opromolla, 2014; Parrotta et al., 2016; Bisztray et al., 2018; Meinen et al., 2018; Lenoir and Patault, 2019; Mion et al., 2019)
  - Existing studies concentrate on firm exports and imports
- **Differences in wages/compensations** (e.g., Heyman et al., 2007; Gabaix and Landier, 2008; Graham et al., 2012; Hijzen et al., 2013; Helpman et al., 2017)
  - Experience in managing foreign operations matters
  - The "multinational wage premium" could be inflated
- **Determinants of corporate tax avoidance and profit shifting** (e.g., Dyreng et al., 2010; Barrios and Gallemore, 2019; Beer et al., 2020; Wang et al., 2020)
  - Executives develop knowledge in profit shifting
  - Tax-dodging practices spread across multinational firms via executive mobility

Outline of the talk

Outline of the talk

Data sources

Compustat, ExecuComp, and Exhibit 21

I combine 3 databases:

- **Compustat**
  - Financial statements of publicly listed firms in North America since 1950
  - These firms are few in number but account for a significant part of economic activities

  I only use the 2 identifiers *GVKEY* and *CIK* to bridge the 2 other databases

- **ExecuComp**
  - Title and compensation of top executives of S&P 1500 firms since 1992
  - These firms represent around 90 percent of US market capitalization

  Thus, I can track top executives both over time and across the largest US-listed firms

- **Exhibit 21**
  - The SEC requires US-listed firms to disclose their "significant" subsidiaries every year in Exhibit 21 of Form 10-K
  - The reports are electronically filed since the 1990s and publicly available
  - I use an extended version of the dataset compiled by Dyreng and Lindsey (2009) covering the 1993-2014 period

  I can therefore draw a clear picture of the worldwide network of subsidiaries of S&P 1500 companies and see how it evolves over time

Data sources

Example of Exhibit 21 report

Figure 1 – (Non-exhaustive) list of significant subsidiaries of Johnson & Johnson in Exhibit 21 (2011)

Name of Subsidiary	Jurisdiction of Organization
U.S. Subsidiaries:	
Acclarent, Inc.	Delaware
ALZA Corporation	Delaware
Alza Development Corporation	California
Alza Land Management, Inc.	Delaware
Animas Corporation	Delaware
Biosense Webster, Inc.	California
Centocor Biologics, LLC	Pennsylvania
Centocor Research & Development, Inc.	Pennsylvania
CNA Development LLC	Delaware
Codman & Shurtleff, Inc.	New Jersey
Cordis Corporation	Florida
Cordis International Corporation	Delaware
Cordis LLC	Delaware
Cougar Biotechnology, Inc.	Delaware
Crescendo Pharmaceuticals Corporation	Delaware
Crucell Holdings Inc.	Delaware
DePuy, Inc.	Delaware
DePuy Mitek, Inc.	Massachusetts
DePuy Orthopaedics, Inc.	Indiana
International Subsidiaries:	
Apsis	France
Beijing Dabao Cosmetics Co., Ltd.	China
Berna Biotech Korea Corporation	Korea
Berna Rhein B.V.	Netherlands
Biosense Webster (Israel) Ltd.	Israel
Cilag Advanced Technologies GmbH	Switzerland
Cilag AG	Switzerland

Final sample

The final dataset contains information on:

- **1,858 S&P 1500 firms** operating between 1993 and 2014
  → number of subsidiaries in a restricted set of 30 foreign countries
- **2,823 top executives** working for at least 2 of these firms between 1993 and 2014
  → experience in managing multinational activities

The dataset is constructed at the **firm** × **country** × **year** level

▸ List of countries ▸ Attractiveness ▸ Other descriptive statistics

Outline of the talk

Econometric approach

A difference-in-difference equation

I assess the effect of **executive experience in managing multinational activities** on **current FDI** by regressing:

$$FDI_{i,c,t} = \alpha TREAT_{i,c,t} + \mu_{i,t} + \upsilon_{c,t} + \gamma_{i,c} + \epsilon_{i,c,t} \quad (1)$$

- $FDI_{i,c,t}$: dummy equal to 1 if firm i has at least one subsidiary in country c and year t
- $TREAT_{i,c,t}$: number of top executives in firm i having worked for a firm with at least one subsidiary in country c at the time
- $\mu_{i,t}$: firm $\times$ year fixed effects
- $\upsilon_{c,t}$: country $\times$ year fixed effects
- $\gamma_{i,c}$: firm $\times$ country fixed effects

Baseline results

Table 1 – Baseline results

	$FDI_{i,c,t}$
$TREAT_{i,c,t}$	0.015^{a}
	(0.003)
Average probability	0.229
Firm × year FEs	Yes
Country × year FEs	Yes
Firm × country FEs	Yes
R^2	0.785
Nb. of obs.	478,500

Notes: The standard error, in parentheses, is clustered at the firm × year level. $^{d}p < 0.15$, $^{c}p < 0.10$, $^{b}p < 0.05$, $^{a}p < 0.01$.

Sensitivity analysis

Outliers, measurement errors, and alternative estimators

This result is robust to:

- **removing in turn one country at a time** from the regression ▸ graph
- **selecting 30 foreign countries randomly** in the database ▸ tabulated results
- using the **2003-2014 period** exclusively ▸ tabulated results
- re-estimating the model using **logit** and **probit** ▸ tabulated results
  correction for the incidental parameters problem based on Hinz et al. (2020)

Outline of the talk

Endogeneity issues

Placebo test, instrumental variable, exogenous shocks, and quasi-natural experiment

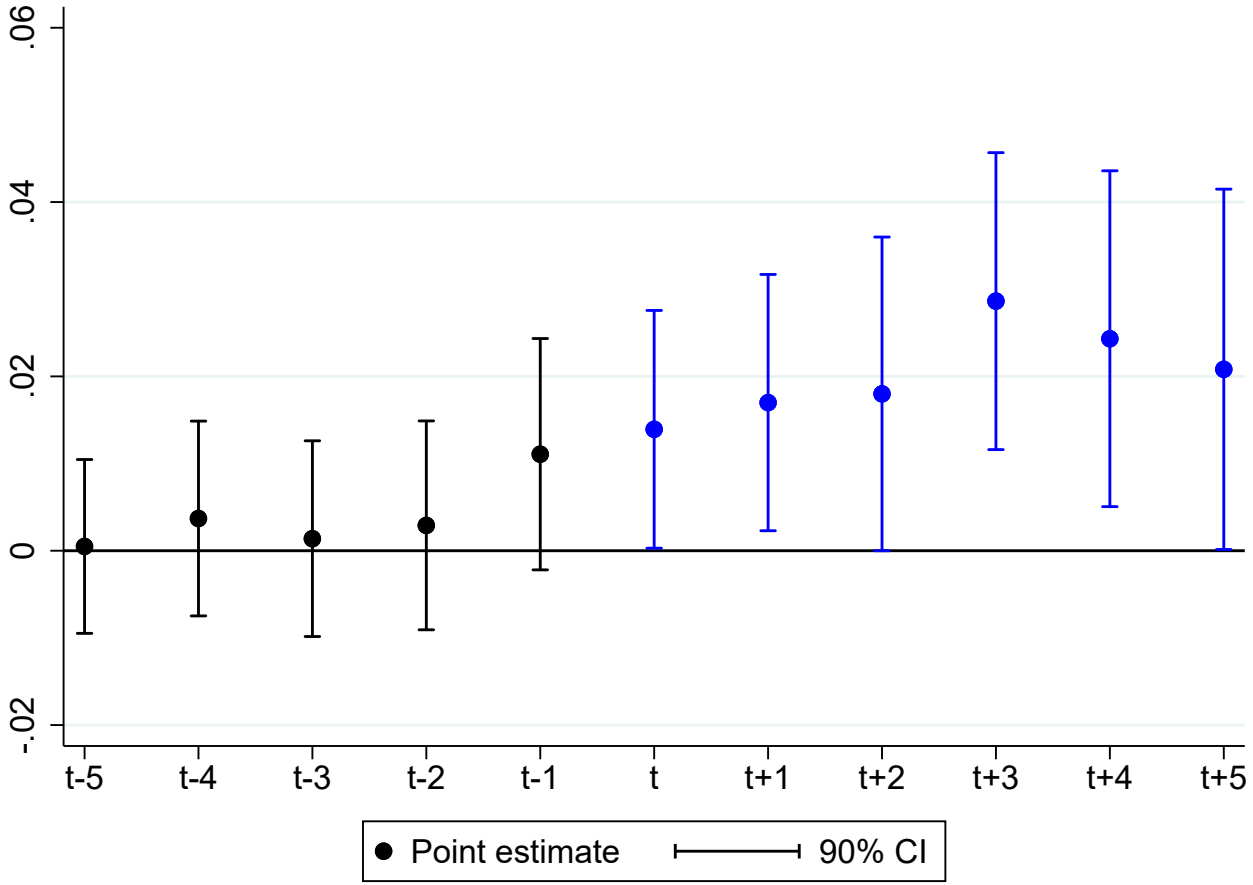
Limitation: the treatment could still be correlated with unobserved firm $\times$ country $\times$ year shocks (e.g., investments)

I tackle this concern in 4 complementary ways, by:

- conducting a **placebo test**
- using **instrumental variables**
- treating movements triggered by **abrupt resignations**, **retirements**, **deaths**, **sudden layoffs**, and resignations and layoffs linked to **legal investigations** as sources of exogenous variation
- exploiting a **quasi-natural experiment**: the granting of the Permanent Normal Trade Relations (PNTR) status by the US to China in late 2000

Placebo test (check 1/4)

Figure 2 – Dynamics of the effect



Takeway: no pre-trends + treatment unlikely to be correlated with *past* unobserved firm × country × year shocks

Instrumental variables (check 2/4)

- **Idea**: instrument $TREAT_{i,c,t}$ with its 3-year lag in the same spirit of Mion and Opromolla (2014) and Mion et al. (2019)
- **Identifying assumption**: appointments have no effect after 3 years
- **Results**: first-stage F-statistic around 1,000 and $\hat{\alpha} = 0.025^{b}$
- **Take-away**: if anything, the correlation between the number of experienced executives and *current* firm $\times$ country $\times$ year shocks does not drive the benchmark results

- Is the identifying assumption too strong and /or sufficient to unravel the effect of the treatment from that of unobserved shocks?

Unexpected movements of executives (check 3/4)

- **Idea**: some appointments aim at helping the firm expand and are clearly endogenous... but others may not, e.g., movements due to abrupt resignations, retirements, deaths, early layoffs, and resignations and layoffs subsequent to legal investigations ▸ examples
- **Identifying assumption**: changes in $TREAT_{i,c,t}$ are exogenous if they are caused by such movements (unanticipated or initiated by executives themselves)
- **Methodology**: collect and scrutinize official documents (e.g., SEC and FBI) and press releases, newswires, and newspapers (e.g., firms' websites, Wall Street Journal, New York Times, Business Wire, PR Newswire) to investigate the causes of executive mobility
- **Results:** $\hat{\alpha} = 0.024^{a}$

Quasi-natural experiment (check 4/4)

- **Idea**: the granting of the PNTR status by the US to China in late 2000 was unanticipated and substantially reduced trade policy uncertainty + policy uncertainty dampens trade, corporate investment, and FDI (e.g., Gulen and Ion, 2016; Handley and Limao, 2017; Wu et al., 2020)
- **Predictions**: firms operating in the most exposed sectors invested relatively more in China in response to the shock + the reaction should be more pronounced for firms having managers familiar with China
- **Methodology**: use a subsample of firms for which $TREAT_i$ is constant between 1995 and 2005 and regress

$$\begin{aligned} FDI_{i,t} &= \alpha TREAT_i \times TPU_{i,j,t} + \beta TPU_{i,j,t} + \mu_i + \upsilon_t + \epsilon_{i,t} \\ \text{with } TPU_{i,j,t} &= 1_{t \geq 2001} \left(NNTR_{i,j,1999} - NTR_{i,j,1999} \right) \end{aligned} \tag{2}$$

- **Results:** $\hat{\alpha} = 0.559^a$ and $\hat{\beta} = 0.327^a$ ▸ common trend assumption

Outline of the talk

More results (1/2)

Country-specific knowledge, top executives, and intensive margin

- Does FDI-related knowledge have to be **country-specific** to help firms penetrate new destinations?
  - Replace firm × year fixed effects with a dummy variable $TREAT_{i,t}$
  - Only country-specific knowledge is determinant ▸ tabulated results
- Is the effect the **same for all executives**?
  - Distinction between CEOs, CFO, COOs, and CMOs, and the rest of executives
  - The average effect is actually attributable to CEOs, CFO, COOs, and CMOs ▸ graph
- Does the effect persist at the **intensive margin**?
  - $FDI_{i,c,t}$ now represents the number of subsidiaries and equation (1) is estimated conditional on $FDI_{i,c,t} \geq 1$
  - Similar effect at the intensive margin ▸ tabulated results

More results (2/2)

Compensations and tax havens

- Does this knowledge translate into **higher compensations** all else equal?
  - Data on executives' compensation (salary, bonuses, stock and option awards, long-term incentive plans, and all other pay)
  - Experience in managing multinational activities entails a 11.2 percent premium in the labor market ▸ graph ▸ tabulated results

- Do the findings hold for **tax havens**?
  - 2 standard classifications: Hines and Rice (1994) and Dyreng and Lindsey (2009)
  - The effect remains positive and carries important policy implications ▸ tabulated results

Outline of the talk

Conclusion

- I build and exploit a database on S&P 1500 firms' subsidiaries and executives between 1993-2014
- I quantify the effect of executive **experience** in multinational operations on **firms' presence abroad** with an event study
- The results confirm that managers acquire **country-specific knowledge**, an asset valuable in the labor market, and help their current firm **develop** in the countries they are familiar with
- Interesting **policy implication**: inspecting movements of executives could allow public authorities to better predict firms' future use of tax havens and curb profit shifting

Thank you for your attention!

Questions, suggestions, and comments are welcome:
baptiste.souillard@ulb.be

Full paper and more info about my research:
www.baptistesouillard.com

Appendix

Appendix – List of the 30 foreign countries

- **Top locations** of S&P 1500 firms' subsidiaries worldwide (US excluded)
- Argentina, Australia, Austria, Belgium, Brazil, Canada, Chile, China, Czech Republic, Denmark, France, Germany, Hungary, India, Italy, Israel, Japan, Mexico, the Netherlands, New Zealand, Norway, Poland, Republic of Korea, Russia, South Africa, Spain, Sweden, Taiwan, Thailand, and the United Kingdom
- Tax havens are omitted in the first part of the paper

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Appendix – Attractiveness of the 30 foreign countries (1/2)

Table 2 – Attractiveness of the 30 foreign countries

Country	Attractiveness
Canada	68.999
United Kingdom	68.192
Netherlands	53.229
Germany	50.431
France	48.661
Mexico	48.332
Australia	46.878
China	44.133
Japan	42.842
Brazil	38.213
Italy	37.944
India	35.953
Spain	35.630
Belgium	29.279
Republic of Korea	27.503
Sweden	27.018
Argentina	24.704
Austria	21.905
Denmark	21.529

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Appendix – Attractiveness of the 30 foreign countries (2/2)

Table 3 – Attractiveness of the 30 foreign countries (ctd)

Country	Attractiveness
Poland	21.098
Taiwan	20.542
New Zealand	20.183
Thailand	19.860
South Africa	19.699
Chile	18.891
Norway	17.560
Czech Republic	16.846
Hungary	16.577
Russia	16.362
Israel	13.402

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Appendix – Other descriptive statistics on firms

Table 4 – Descriptive statistics on S&P firms

Firms	
Total number of firms	1,858
of which have had at least one subsidiary in one of the 30 foreign countries	1,772
Average number of countries in which they have had subsidiaries (conditional)	10.195
Average number of subsidiaries in foreign countries (conditional)	26.235

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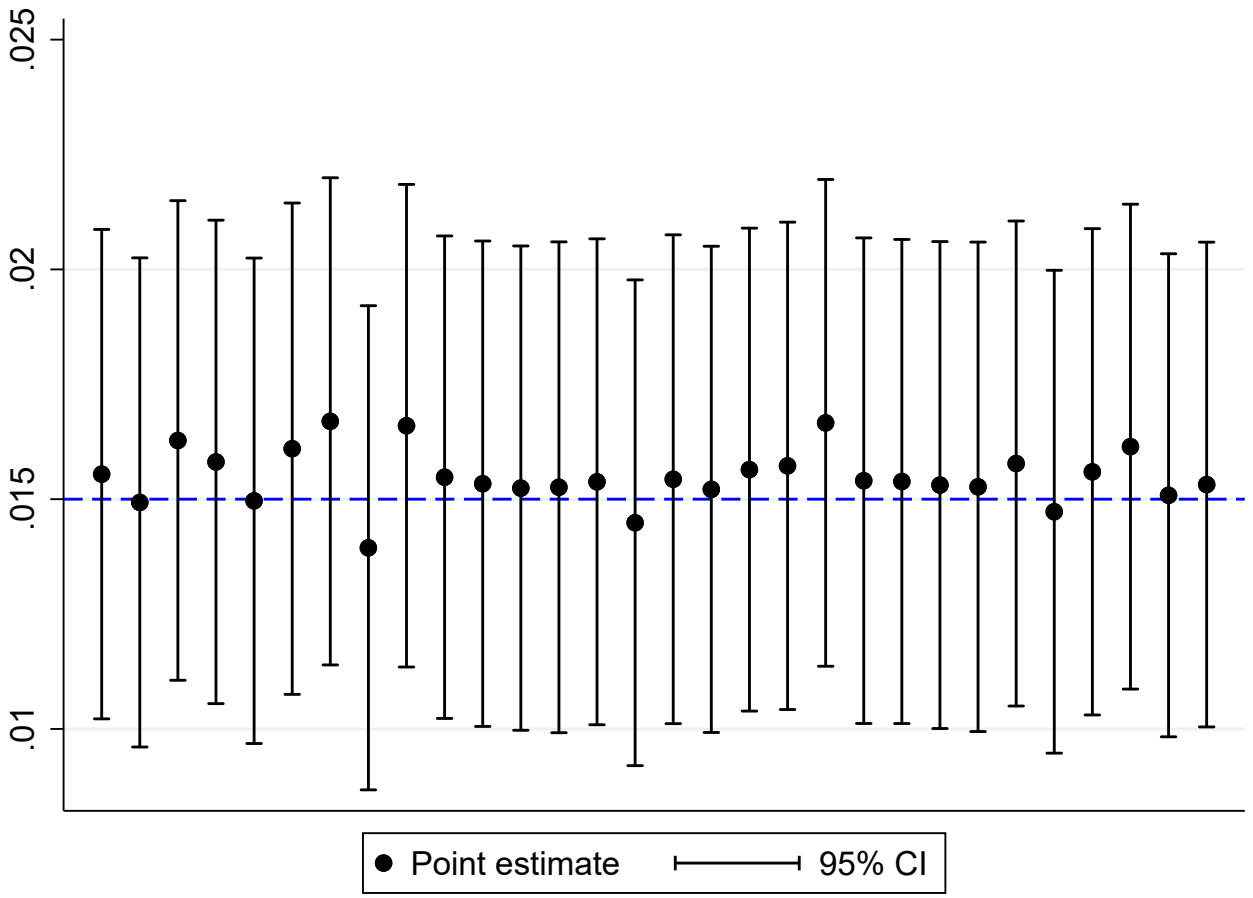
Appendix – Robustness tests (1/2)

Figure 3 – Robustness test: exclusion of one country at a time



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Appendix – Robustness tests (2/2)

Table 5 – Robustness tests: others

	$FDI_{i,c,t}$
Panel A: 30 randomly drawn foreign countries	
$TREAT_{i,c,t}$	0.027^{a}
Panel B: 2003-2014 period	
$TREAT_{i,c,t}$	0.017^{a}
Panel C: logit and probit	
$TREAT_{i,c,t}$ (logit)	0.074^{c}
$TREAT_{i,c,t}$ (probit)	0.052^{c}

Notes: In panel A, the period is 1993-2014 and the results are obtained with ordinary least squares. In panel B, the period is 2003-2014 and the results are obtained with ordinary least squares. In panel C, the period is 1993-2014 and the results are obtained with logit or probit. Standard errors are clustered at the firm × year level and not reported for space. $^{d}p < 0.15$, $^{c}p < 0.10$, $^{b}p < 0.05$, $^{a}p < 0.01$.

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Appendix – Unexpected movements of executives (1/4)

- "*August 12, 1999 – DBT Online, Inc. announced that Ron Fournet, Chief Information & Technology Officer, has been named President and CEO, replacing Charles A. Lieppe, who resigned as an Officer and Director effective immediately due to personal reasons.* "A sudden illness in my immediate family made it impossible for me to devote my full attention to DBT," *said Mr. Lieppe, who joined DBT as President and CEO in 1997.*" (SEC Exhibit 99.1 Form of DBT, August 13, 1999)

  → The shock faced by DBT in 1999 is exogenous insofar as Charles A. Lieppe left suddenly and on his own volition.

Appendix – Unexpected movements of executives (2/4)

- "*Avon Products Inc. fired its vice chairman [Charles W. Cramb] in connection with probes into possible bribery overseas and improper disclosures to Wall Street analysts in the US.*" (Wall Street Journal, January 31, 2012)

  → The shock faced by Avon in 2012 is exogenous insofar as the departure of Charles W. Cramb results from an investigation.

- "*Impax Laboratories Inc.'s board has elected Robert Burr chairman.Burr, who has been an independent director of the Hayward company since 2001, succeeds Charles Hsiao, co-founder of Impax's predecessor, IMPAX Pharmaceuticals Inc. Hsiao died in August.*" (The Business Journals, December 15, 2008)

  → The shock faced by IMPAX in 2008 is exogenous because it is attributable to the death of Charles Hsiao.

Appendix – Unexpected movements of executives (3/4)

- "*Sears Holdings Corp. abruptly announced the departure of president and chief executive Aylwin B. Lewis on Monday, leaving a management void at the top of the department store chain controlled by chairman Edward S. Lampert as it tries a high-stakes restructuring to reconnect with customers and reinvigorate slumping sales. Lewis was at fast-food chain Yum Brands Inc. and had little retail experience when he was hand-picked by Lampert in 2004 to run Kmart and later Sears. W. Bruce Johnson was named interim CEO while the company looks for a permanent successor.*" (Tampa Bay Times, January 29, 2008)

  → The shock faced by Sears in 2008 is exogenous since the firm did not have time to find directly a permanent replacement.

Appendix – Unexpected movements of executives (4/4)

- "*Progress Software Corporation, a leading software provider that enables enterprises to be operationally responsive, announced today the appointment of Charles "Charlie" F. Wagner as executive vice president, Finance & Administration and chief financial officer (CFO), reporting to Richard D. Reidy, president and chief executive officer. Richard D. Reidy said:* "We are delighted with the appointment of Charlie Wagner after a search process that considered a very strong field of candidates."" (Market Wire, November 15, 2010)

  → The shock faced by Progress in 2010 is endogenous this time as the firm appointed Charles F. Wagner after a long process.

- "*PictureTel taps WorldCom's [Bruce] Bond in a bid to boost company's sales.*" (Wall Street Journal, February 10, 1998)

  → The shock faced by PictureTel in 1998 is endogenous since the appointment is purely strategic.

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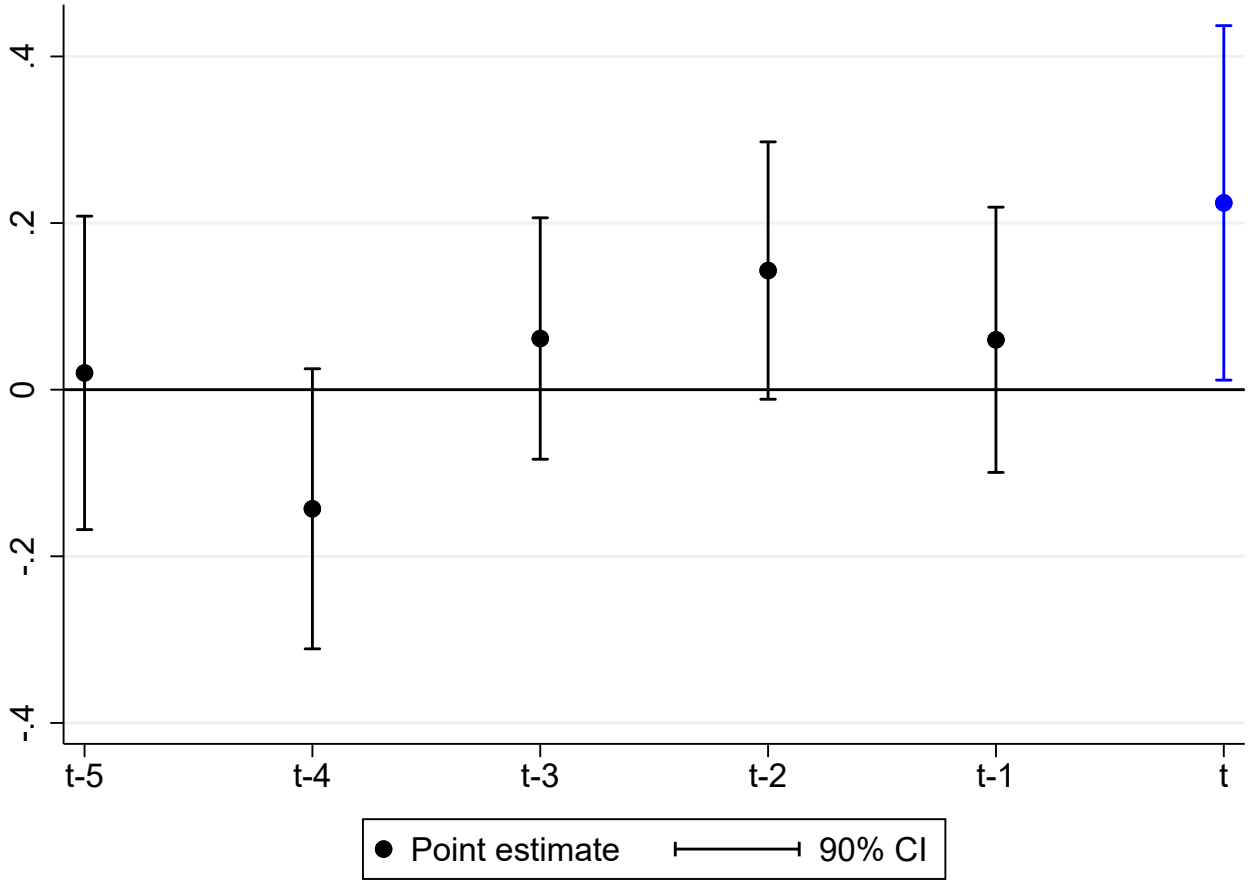
Appendix – PNTR as a quasi-natural experiment

Figure 4 – PNTR and pre-existing trends



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Appendix – Global *versus* country-specific experience

Table 6 – Global *versus* country-specific experience

	$FDI_{i,c,t}$
$TREAT_{i,c,t}$	0.020^{a}
	(0.004)
$TREAT_{i,t}$	0.006^{d}
	(0.004)
Average probability	0.229
Country × year FEs	Yes
Firm × country FEs	Yes
R^2	0.692
Nb. of obs.	478,500

Notes: Standard errors, in parentheses, are clustered at the firm × year level. $^{d}p < 0.15$, $^{c}p < 0.10$, $^{b}p < 0.05$, $^{a}p < 0.01$.

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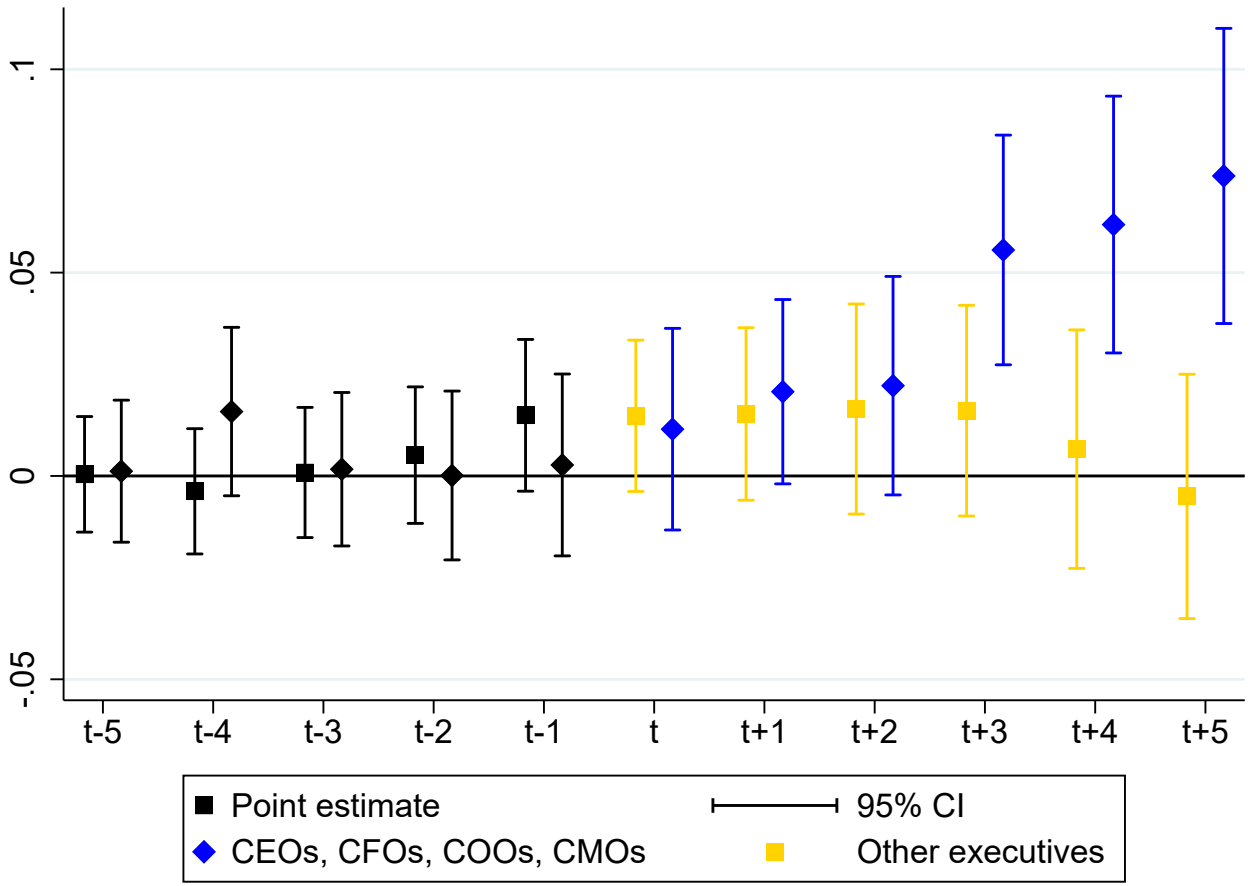
Appendix – C-level executives *versus* the rest

Figure 5 – C-level executives *versus* the rest



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Appendix – Intensive margin

Table 7 – Results at the intensive margin

	$FDI_{i,c,t}$
Panel A: OLS estimator	
$TREAT_{i,c,t}$	0.264^{a}
Panel B: 2SLS estimator	
$TREAT_{i,c,t}$	1.460^{a}

Notes. Regressions are run conditional on $FDI_{i,c,t} \geq 1$. Standard errors, in parentheses, are clustered at the firm $\times$ year level. $^{d}p < 0.15$, $^{c}p < 0.10$, $^{b}p < 0.05$, $^{a}p < 0.01$.

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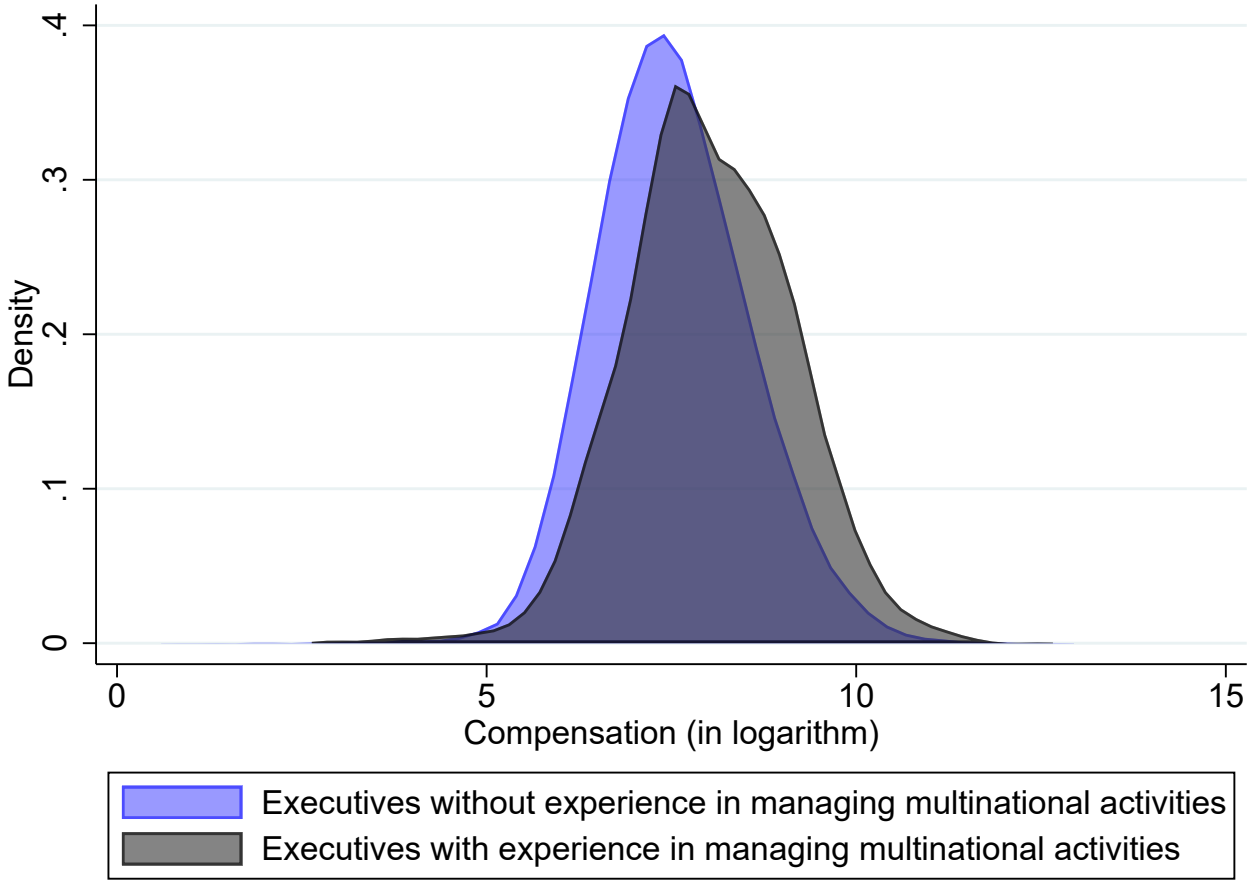
Appendix – Experience and compensation (1/2)

Figure 6 – Executive compensation: distribution



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Appendix – Experience and compensation (2/2)

Table 8 – FDI-related experience and executive compensation

	$log(compensation_{e,i,t})$
$FDI\ experience_{e,t}$	0.112^{c}
	(0.060)
Executive FEs	Yes
Firm FEs	Yes
Year FEs	Yes
R^2	0.775
Nb. of obs.	52,273

Notes: Executive e's age in year t is included as control. The standard error, in parentheses, is clustered at the firm × year level. $^{d}p < 0.15$, $^{c}p < 0.10$, $^{b}p < 0.05$, $^{a}p < 0.01$.

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Appendix – The case of tax havens

Table 9 – The case of tax havens

	$FDI_{i,c,t}$
Panel A: definition of Hines and Rice (1994) and Dyreng and Lindsey (2009)	
$TREAT_{i,c,t}$	0.028^{a}
Panel B: restricted set of small and remote tax havens	
$TREAT_{i,c,t}$	0.024^{a}

Notes. Standard errors are clustered at the firm × year level. They are not reported for space. $^{d}p < 0.15$, $^{c}p < 0.10$, $^{b}p < 0.05$, $^{a}p < 0.01$.

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