The Value of International Experience: Managerial Talent and Firm Performance in Post-Communist Hungary*

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Abstract

The allocation of talent is a critical factor in economic growth and organizational success, with managerial and entrepreneurial skills playing a key role in firm performance. While recent research has demonstrated the importance of managerial practices, the impact of institutional environments on talent development remains understudied. The transition from communist to market economies provides a unique setting to examine this relationship. Here we show that international experience, particularly in developed countries after 1990, significantly enhances firm productivity and export propensity in post-communist Hungary. Using a novel dataset combining biographical information of business leaders with firm-level data, we find that managers with post-1990 experience in developed countries are associated with 10.5 percent higher labor productivity and a 2.4 percentage point increase in export probability. Notably, pre-1990 international experience shows no positive effects, highlighting the importance of exposure to market-oriented practices. These findings provides insights for policymakers and business leaders on the value of international experience in fostering productive managerial skills, particularly in countries undergoing significant institutional transformations.

Preliminary, do not share.

Keywords: Talent; Managers; International Mobility; Productivity

JEL Codes: L26, O15

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1 Introduction

The allocation and development of talent play a crucial role in driving economic growth and organizational success. Efficiently placing talent, particularly managerial and entrepreneurial, can significantly improve firm productivity and yield broader economic benefits. Conversely, poor talent allocation can impede economic progress and limit firms' potential.[1] This paper examines the extent to which institutions affect the composition of talents in an economy and whether certain institutional environments are more conducive to developing entrepreneurial and business talent.

Recent literature has highlighted the importance of managerial talent for firm performance, demonstrating causal effects of improved managerial practices on firm outcomes (Bloom et al., 2013; Bruhn et al., 2018; Iacovone et al., 2022). Studies have also shown that the impact of management interventions can be long-lasting (Giorcelli, 2019; Bloom et al., 2020; Bianchi and Giorcelli, 2022). However, this literature has primarily focused on the effects of management practices and training within established market economies. There remains a gap in our understanding of how different institutional environments, particularly the transition from a communist to a market economy, shape the development and allocation of managerial and entrepreneurial talent.

We explore these questions using a newly collected historical dataset from Hungary, which provides a unique setting to study the effects of institutional change on talent development. Our data combines biographical information from Hübner's Who is Who, a comprehensive encyclopedia of notable individuals, with firm-level data from Opten. This rich dataset allows us to track the education and career paths of Hungarian business leaders across different institutional periods, including the communist era and the subsequent transition to a market economy.

Our findings reveal that international experience, especially in developed countries after 1990, is associated with significantly higher firm productivity and a greater likelihood of exporting. Managers with post-1990 experience in developed countries are associated with 10.5% higher sales, with this effect being even stronger (14.4%) for younger managers.

[1] For instance, Murphy et al. (1991) demonstrate that economies encouraging the development of productive skills tend to grow more. Similarly, Hsieh et al. (2019) emphasize how shifting talent from low-productivity to high-productivity sectors helps explain differences in income across countries.

Moreover, such experience increases the probability of a firm being an exporter by 2.4 percentage points. Interestingly, we find that experience in developed countries before 1990 shows no significant positive effects and, in some cases, is associated with lower productivity.

These results suggest that the institutional environment plays a critical role in shaping the development of managerial talent. The stark contrast between the effects of pre- and post-1990 international experience highlights the importance of exposure to market-oriented practices and up-to-date knowledge in fostering productive managerial skills. Our findings contribute to the broader literature on talent allocation and institutional change by demonstrating how the transition from a communist to a market economy affects the productivity of managerial talent and, consequently, firm performance.

The significance of managerial talent for firm performance is the subject of a wide literature on the effects of improved managerial practices. Several papers have provided causal evidence that the adoption of better managerial practices has large and positive effects on firms' outcomes (e.g., Bloom et al. (2013); Bruhn et al. (2018); Iacovone et al. (2022); Gosnell et al. (2020); Macchiavello and Morjaria (2022); Manaresi et al. (2022)). Bloom et al. (2021) assess how better management practices lead to a stronger performance in the export market in the US and China, while Mion et al. (2016) exploit managers' mobility to show that management-specific market knowledge facilitates export to a certain location. Taking a long-run perspective, Giorcelli (2019), Bloom et al. (2020), and Bianchi and Giorcelli (2022) have shown that the impact of management interventions can be long-lasting. Moreover, results indicate that such interventions should not be limited to the higher levels of management, but they produce positive outcomes also when extended to lower-middle management position. Finally, Bloom et al. (2020) documented sizable spillover effects of some positive managerial practices across plants within the same firm.

Management talent and its development are also linked to the selection or replacement of CEOs and top executives, who are ultimately responsible of shaping a company's capital structure, investment strategies, and employee retention. Bertrand and Schoar (2003), Kaplan et al. (2012), Benmelech and Frydman (2015), Bandiera et al. (2020), and Cai and Prat (2023) have shown how these leaders affect corporate policies. Additionally, manager talent improves job allocation and career progression (Minni, 2023) and enhances produc-

tivity even in public sector settings (Fenizia, 2022). Even when management policies are largely fixed, individual managers significantly impact firm-level outcomes, as demonstrated by Metcalfe et al. (2023) in retail.

Together with in-company training, also education plays an essential role in shaping managers' skills. For instance, Giorcelli (2023) investigates the effects of MBA-style education on middle managers, showing that such training increases promotion likelihood and entrepreneurial engagement. Similarly, studies such as Bhagat et al. (2010), Miller and Xu (2016), and Miller and Xu (2019) suggest that MBA-trained managers improve short-term firm performance but may not affect long-term outcomes. In contrast, Acemoglu et al. (2022) argue that MBA-educated CEOs reduce employee wages by withholding profit-sharing.

The communist experience heavily affected the business environment and talent allocation in Central and Eastern Europe (CEE). Communist regimes typically discouraged private enterprise and self-initiative, preventing the development of entrepreneurial skills (Alesina and Fuchs-Schündeln, 2007; Aidis et al., 2008; Estrin et al., 2013; Neimanis, 1997). After the collapse of communism, many individuals who had been part of the state bureaucracy or connected to the regime transitioned into entrepreneurial roles. However, these new entrepreneurs were often negatively self-selected, possessing the social capital and connections from their previous roles but lacking the entrepreneurial skills necessary for long-term success (Johnson and Loveman, 1995; Djankov et al., 2005; Nikolova and Simroth, 2015; Laki and Szalai, 2004, 2013).

The liberalization of these economies created numerous opportunities for entrepreneurs to provide products and services that had been of poor quality or previously unavailable. According to Johnson and Loveman (1995), transitioning to a market economy allowed entrepreneurs the flexibility to allocate resources to the most profitable activities. However, the legacy of communist ideology often stifled innovation, as many new entrepreneurs adhered to outdated business models and less competitive practices (Brouthers et al., 2008; Neimanis, 1997).

Interestingly, entrepreneurs with ties to the former communist regime often faced lower business longevity, highlighting the importance of education and experience in fostering successful entrepreneurship. Studies show that former party members were more likely to

start businesses but were less successful in maintaining them, as they were often unprepared for the competitive pressures of a market economy (Tyson et al., 1994; Djankov et al., 2005).

The literature also emphasizes the importance of biographical experiences in shaping managerial and entrepreneurial talent. Benmelech and Frydman (2015) find that military experience influences CEOs' risk-taking behavior, leading to more conservative corporate policies. Similarly, Malmendier and Tate (2005) and Malmendier et al. (2011) show that CEOs who experienced the Great Depression are more cautious in their decision-making. In contrast, Sunder et al. (2017) document that sensation-seeking traits in CEOs drive innovation, while Custódio and Metzger (2014) link financial experience to better financial decision-making.

These findings highlight the complex interplay between individual experiences and leadership styles. In post-communist contexts, entrepreneurs and managers with backgrounds rooted in the former regime may struggle to adapt to the demands of a market economy, perpetuating old-fashioned business practices and limiting their firms' ability to innovate. Conversely, exposure to new ideas and market-oriented education has been shown to foster entrepreneurial success (Kotter and Larkin, 2024).

2 Data

2.1 Hübner's Who is Who

"Hübner's Who is Who" (Hübner, 2013) was a biographical encyclopedia series published by Who is Who Verlag für Personenenzyklopädien AG, based in Zug, Switzerland. The encyclopedia included biographies of notable individuals from various countries, and over time expanded its network to include Austria, Germany, Poland, Slovakia, the Czech Republic, Hungary, Russia, Turkey, Romania, and Greece. The first edition was released in Austria in 1978, followed by other countries. By 1989, the series reached Germany, and further extended to Eastern Europe in the early 2000s.

The data collection process involved identifying potential candidates from publicly accessible directories, followed by personal interviews conducted by sales representatives. The data was periodically updated every three years. After several years of operation, the company filed for bankruptcy and was liquidated in 2016.

Data provide information on an individual history, with a focus on his/her education pattern and career development. We are therefore able to extract relevant information on people's mobility both during their education and career. We first extract city names from each person's biographic entries about education and career. These cities are often abbreviated, misspelled, or mentioned in a different language. We then match the potential cities to GeoNames (GeoNames, 2024), which lists alternative spellings of each city. GeoNames also lists the country of each city, so we can classify each person's educational experience as domestic or international. Among international destinations, we separate post-communist countries from developed ones.

To extract individuals' occupation, we create a training dataset of 6,200 occupation descriptions, translated into English and classified into four categories (business, professional, art, academia) using relevant keywords.[2] Once the text data was vectorized with TF-IDF, a Random Forest classifier was trained to predict categories, and applied to the full dataset. An additional "Other" category was created for unclassified occupations.

Our sample includes about 65,000 biographies from Hungary (2013), 140,000 for Germany (2006) and about 50,000 for Austria (2006). Our analysis focuses on Hungary, where we can match the data with company records.

2.2 Opten data

We use official register data on all Hungarian corporations that were active in 2013 (Opten, 2022a). Register data includes the names and other personal identifiers of the owners and the managers of each corporation, including its Chief Executive Officer (CEO). We also have balance sheet and financial statement information for most of these firms (Opten, 2022b).

There are 422,000 firms that appear both in the register and the financial data. The vast majority of these firms are micro entreprises with less than 10 employees (see Table 1). We classify individuals associated with the corporation as "owner," "manager" or "CEO." There are 1.2 million such positions to analyze, occupied by 981,000 individuals.

Table 1 reveals notable differences between firms whose managers or owners are included in Who is Who and those that are not. Firms in Who is Who tend to be larger: they are

[2]We include the list of words in the Appendix A.

Variable	Not in Hübner	In Hübner
Micro firm, 1–9 (%)	93.53	85.30
Small firm, 10–49 (%)	5.47	10.33
Medium firm, 50–249 (%)	0.87	3.31
Large firm, 250+ (%)	0.13	1.06
Foreign ownership (%)	7.12	5.70
Exporter (%)	7.60	12.76
CEO (average number)	1.20	1.43
Owner (average number)	1.99	2.93
Other manager (average number)	0.084	0.82
Observations	384,581	38,667

Table 1: Descriptive Statistics by Inclusion in Hübner

less likely to be micro firms (85.30 percent vs 93.53 percent) and more likely to be small, medium, or large enterprises. These firms are also more export-oriented, with 12.76 percent being exporters compared to only 7.60 percent of firms not in Who is Who. Interestingly, firms in Who is Who have slightly lower foreign ownership (5.70 percent vs 7.12 percent). The leadership structure also differs, with Who's Who firms having more CEOs (1.43 vs 1.20 on average), owners (2.93 vs 1.99) and managers (0.08 vs 0.82).

2.3 Matching

To match the Hübner data with Opten, we use the names and mother's names of individuals. We first clean names of degrees, titles and honorifics, and then parse them into given names and family names, including husband's names for women. We then compare the name component for each candidate match and assign scores based on "term frequency, inverse document frequency" (TF-IDF). Inverse document frequency is measuring the rarity of the name as $\ln(n/n_i)$, where n_i is the number of records in which name component i appears and n is the total number of records. Common names have low IDF, rare names have high IDF. We then add these scores across all the name components of the record ("term frequency") where the two name components did not differ in more than one character. A candidate match will have a high TF-IDF score if it includes many rare name components that are the same.

For example, suppose that A and B are common male names and Z and Y are rare female names.[3] A male CEO with names A+B and mother's name Z will have a high score

[3]Privacy considerations prohibit us from disclosing actual names.

even if his own name is common. Similarly, a female CEO with Z+Y and no mention of mother's name will get a high score because the names are so rare.

We use 13.815 as the cutoff for TF-IDF, meaning that the chance of any two random individuals sharing the same name is 1 in 1 million. In 97 percent of the matched cases, the person reports the same birth year in Hübner and Opten, suggesting that the matching is accurate.

2.4 Descriptive Statistics

Our dataset provides a rich view of Hungarian business leaders across different time periods. Figure 1 shows the distribution of individuals recorded in Hübner's Who is Who by birth year. We observe a gradual increase in the number of individuals born from the 1930s to the 1950s, with a peak for those born in the early 1950s. This cohort would have been in their late 30s and early 40s at the time of Hungary's transition to a market economy in 1990, potentially positioning them as key players in the country's economic transformation.

Figure 1: Hungarians recorded in Hübner's Who is Who, by birth year

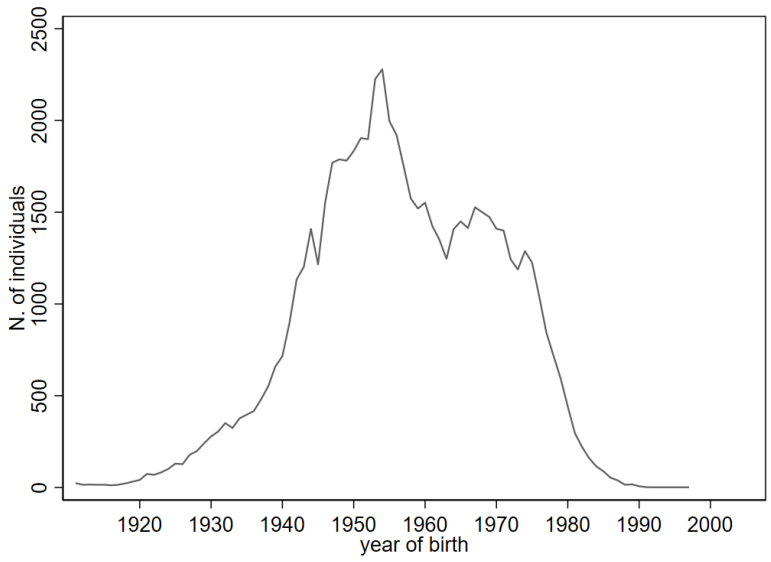
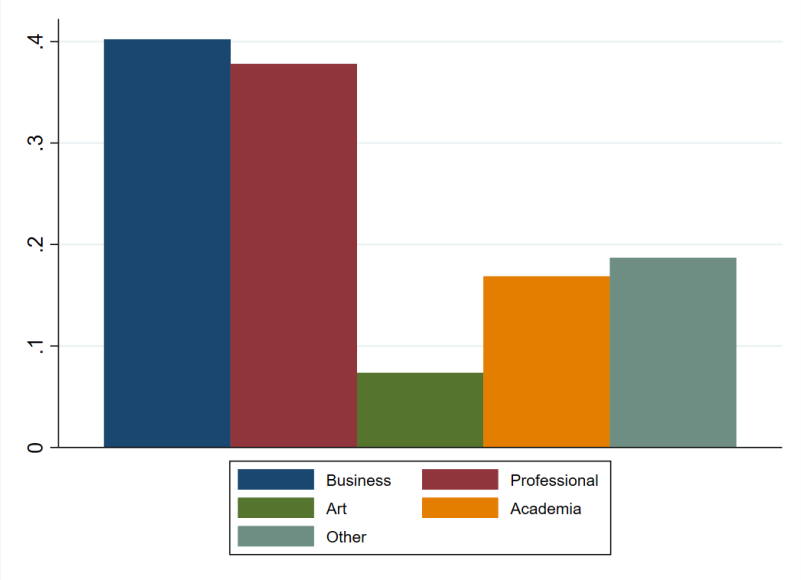


Figure 2 illustrates the distribution of talent across different fields over time. We see that the business sector consistently accounts for the largest share of individuals in our sample, followed by professionals and academics. The relative stability of these proportions over time suggests a persistent structure in the allocation of talent across sectors in Hungary.

Figure 2: Fields of talent, as share of Hungary's total recorded people



To account for potential selection bias in our sample, we estimate the probability of an individual being included in Hübner's Who is Who. We model this selection process using the following logistic regression:

$$\Pr(\text{in_WiW}_{ij} = 1) = \Lambda(\beta_0 + f(\ln L_i) + g(\text{Age}_j) + \gamma_s + \delta_p + \phi \text{FO}_i), \tag{1}$$

where in_WiW_{ij} is a binary variable indicating whether individual j from firm i is included in Who is Who, $\Lambda(\cdot)$ is the logistic function, L_i is firm employment, Age_j is the individual's age, γ_s are industry fixed effects at the 1-digit level, δ_p are position fixed effects, and FO_i is a dummy for foreign ownership. The functions $f()$ and $g()$ are third-order polynomials.

We estimate this equation separately for each combination of sector (primary, secondary, tertiary) and gender, allowing for differential selection processes across these groups. The model is estimated using maximum likelihood with standard errors clustered at the firm level to account for potential within-firm correlations in the error term.

Following estimation, we calculate predicted probabilities of inclusion in Who is Who for each individual in our sample. These probabilities will be used in subsequent analyses to correct for potential selection bias, ensuring that our main results are robust to the non-random selection of individuals into the Who's Who directory.

Figures 3 and 4 depict the selection patterns based on age and firm size, respectively.

Figure 3 reveals that the probability of inclusion in Who's Who increases with age up to around 60 years old, after which it slightly declines. This pattern likely reflects the accumulation of experience and achievements over an individual's career. Males are much more likely to be included in the encyclopedia as notable.

Figure 3: Selection into Hübner's Who is Who, by age

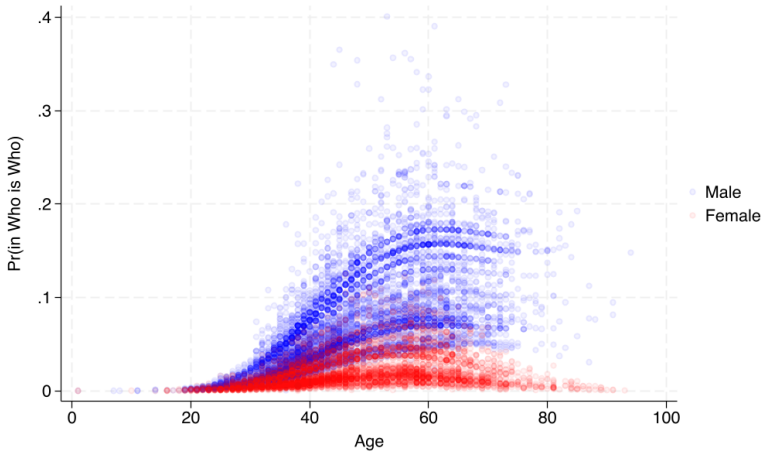


Figure 4 shows a strong positive relationship between firm size (measured by log employment) and the probability of inclusion in Who's Who, indicating that leaders of larger firms are more likely to be featured in the directory.

Figure 4: Selection into Hübner's Who is Who, by firm size

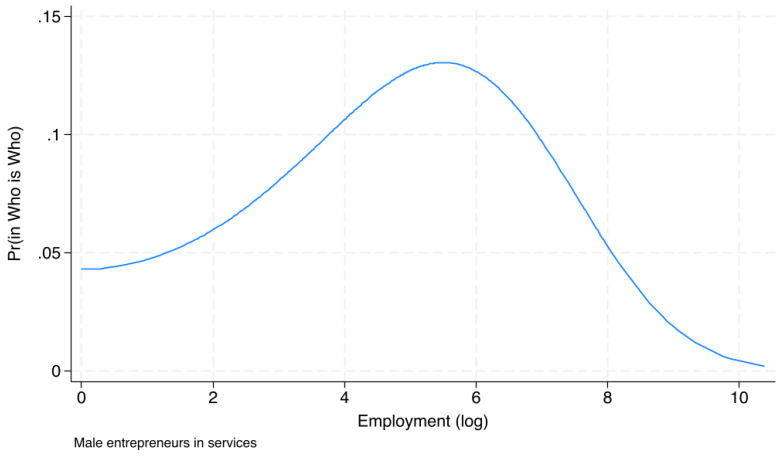


Figure 5 presents the share of individuals in each birth cohort who had experiences abroad. We observe a general upward trend, with more recent cohorts being more likely

to have international experience. This trend accelerates for cohorts born after 1960, who would have reached adulthood around or after the fall of communism in 1990.

Figure 5: Share of the people born in each year that had experiences abroad

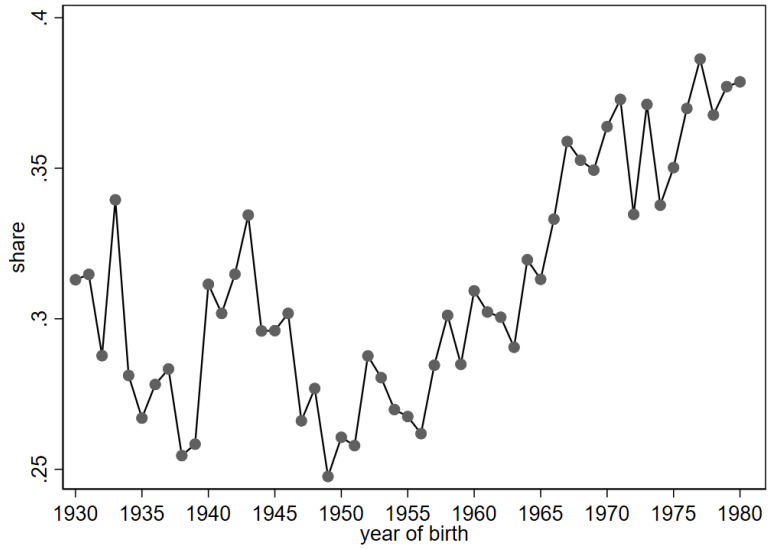
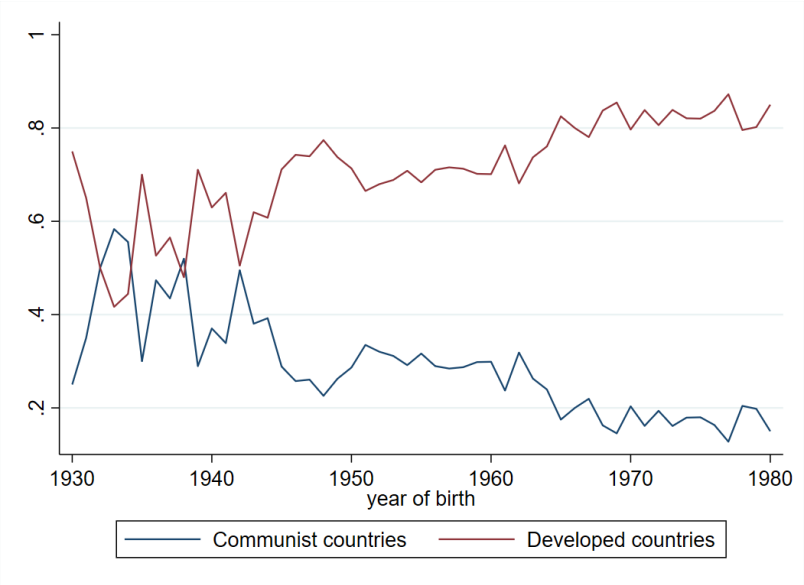


Figure 6 provides a breakdown of foreign experiences by the type of destination country. Developed countries feature prominently, suggesting that Hungarian business leaders often gained experience in advanced market economies.

Figure 7 compares foreign experience of Hungarian business leaders to that of their German and Austria counterparts. Looking only at developed destination countries, we see that Hungarian business leaders were much less likely to spend time abroad before the end of the 1980 than German or Austrian business people. The gap suddenly closed with the fall of communism in 1988-1990 and since then the patterns of outward mobility are similar.

These descriptive statistics paint a picture of increasing internationalization of Hungarian business talent following the transition to a market economy, with younger cohorts and leaders of larger firms being more likely to gain international experience, particularly in developed countries. The Appendix contains further descriptives.

Figure 6: Business people with foreign experience, by destination



3 Foreign experience and firm performance

We are interested in whether foreign experience is associated with better firm performance. The regression equations for our analysis can be expressed as follows:

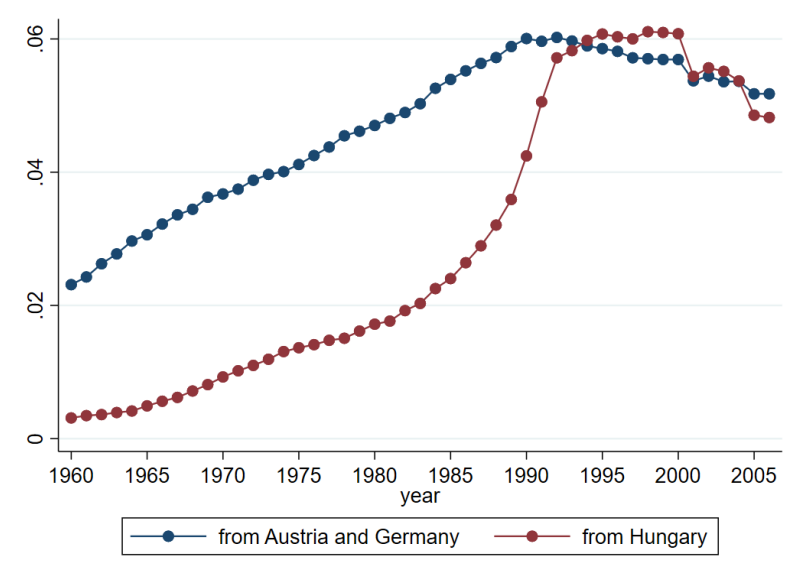
$$\ln \text{Sales}_{ij} = \beta_0 + \beta_1 \text{Experience}_j + \beta_2 \ln L_i + \beta_3 \text{Male}_j + \beta_4 \text{CEO}_j + \beta_5 \text{Age}_j + \beta_6 \text{Age}_j^2 + \beta_7 \text{FO}_i + \gamma_s + \epsilon_{ij} \tag{2}$$

$$\text{Exporter}_{ij} = \alpha_0 + \alpha_1 \text{Experience}_j + \alpha_2 \ln L_i + \alpha_3 \text{Male}_j + \alpha_4 \text{CEO}_j + \alpha_5 \text{Age}_j + \alpha_6 \text{Age}_j^2 + \alpha_7 \text{FO}_i + \delta_s + \nu_{ij} \tag{3}$$

In these equations, the subscript i denotes the firm and j denotes the individual (CEO or owner). An observation in our dataset is a person-firm pair, allowing for the possibility of multiple individuals associated with a single firm if more than one owner or CEO is present in the Who's Who directory. This is a cross-sectional analysis, so there is no time dimension to consider.

The dependent variable in the first equation, $\ln(\text{Sales}_{ij})$, is the natural logarithm of sales for firm i associated with person j. In the second equation, Export_{ij} is a binary variable indicating whether firm i associated with person j is an exporter. On the right-hand side, Experience_j represents the international experience of individual j, which in different specifications could be broken down into study abroad, work abroad, experience

Figure 7: Business people abroad in a developed country as share of total people recorded, by year



in developed or socialist countries, and pre- or post-1990 experience (as explained below).

The variable $\ln L_i$ is the natural logarithm of employment at firm i, Male_j is a dummy variable indicating if individual j is male, CEO_j is a dummy variable indicating if individual j is listed as the CEO of the firm, Age_j and Age_j^2 are the age and age squared of individual j, and FO_i is a dummy variable indicating if firm i has majority foreign ownership.

The parameters γ_s and δ_s represent industry fixed effects at the 2-digit NACE level, while ϵ_{ij} and ν_{ij} are the error terms. The coefficients (β and α) represent the effects of these variables on the dependent variables. In the sales regression, they can be interpreted as percentage changes (for dummy variables) or elasticities (for continuous variables). In the export status regression, they represent changes in the probability of exporting. This structure allows us to examine how both firm-level characteristics and individual-level experiences and attributes affect firm performance and export behavior, while controlling for industry-specific effects.

Table 2 shows regression results for firm productivity. The coefficients show the estimated effect of each variable on the logarithm of sales, our measure of firm productivity, holding other factors constant. We measure international experience with dummies.[4] For example, the dummy "Studied abroad" is one if the person spent any amount of his or her

[4]Years of experience yields qualitatively similar results.

studies in a country other than Hungary. Similarly, "Worked in a developed country after 1990" means that he or she spent some time in a developed country, as listed on his or her career record and at least one year of this was after 1990.

International experience, especially in developed countries, shows a significant positive relationship with firm productivity. Model 1 indicates that having worked abroad is associated with 7.3% higher sales (significant at the 1% level), while studying abroad has no significant effect. Models 2-5 offer more detailed insights by separating experiences in developed and socialist countries, and before and after 1990 (the end of the socialist era in Hungary). Working in a developed country after 1990 is associated with 10.5% higher sales (Model 3). This effect is stronger for younger managers (age $\leq$ 50), with a 14.4% sales premium (Model 4). Interestingly, working in a developed country before 1990 shows a negative association (-9.2% in Model 3), possibly due to outdated skills or practices. Experience in socialist countries shows no significant effects across the models.

Other factors also significantly affect firm productivity. Firm size, measured by the logarithm of employment, is strongly positively associated with sales in all models. Male managers are associated with 14.3-16.5% higher sales, conditional on employment. The CEO being listed in Who is Who is associated with 4.8-8.0% higher sales, possibly reflecting the value of reputation or networking. Foreign ownership shows a strong positive effect, associated with 51.2-56.9% higher sales, which may indicate better management practices or access to international markets.

Manager age has a complex relationship with productivity. The positive coefficient on age and negative coefficient on age squared suggest a generally positive but diminishing effect of age, possibly balancing experience and adaptability to new practices.

Models 4 and 5, which split the sample by manager age, show that the positive effect of post-1990 experience in developed countries is much stronger for younger managers (14.4% vs. 4.7%, with the latter not statistically significant). This could indicate greater adaptability of younger managers or the more immediate relevance of their international experience.

These findings suggest that recent international experience in developed countries, particularly for younger managers, may significantly contribute to firm productivity. This could be through the transfer of modern business practices, technologies, or international

networks. However, it is important to note that while these associations are strong, we cannot definitively infer causality from this analysis. More productive firms might also be more likely to hire managers with international experience, or there might be unobserved factors affecting both international experience and firm productivity.

Table 3 presents the results of linear probability models examining the relationship between international experience of CEOs or owners and the likelihood of a firm being an exporter. As this is a linear probability model, the coefficients can be interpreted as marginal effects on the probability of exporting.

The results show that international experience is positively associated with the probability of exporting. In Model 1, having studied abroad is associated with a 1.1 percentage point higher probability of exporting (significant at the 5% level), while having worked abroad is associated with a 1.7 percentage point increase (significant at the 1% level).

Model 2 distinguishes between experience in developed and socialist countries. Working in a developed country is associated with a 2.3 percentage point increase in the probability of exporting (significant at the 1% level), while experience in socialist countries shows no significant effect.

Model 3 further separates the effects of international experience before and after 1990. Working in a developed country after 1990 is associated with a 2.4 percentage point increase in the probability of exporting (significant at the 1% level). Interestingly, experience in developed countries before 1990 shows no significant effect on exporting probability.

Models 4 and 5 split the sample by manager age, revealing some notable differences. For younger managers (age ≤ 50), working in a developed country after 1990 is associated with a 2.5 percentage point increase in exporting probability, while for older managers, the effect is 2.0 percentage points (both significant at the 1% level). Surprisingly, for younger managers, experience in developed or socialist countries before 1990 is associated with a decrease in exporting probability (3.3 and 4.3 percentage points respectively, significant at the 5% level).

Other factors also play important roles in determining export status. Firm size, as measured by log employment, is consistently associated with a higher probability of exporting across all models (about 10 percentage points per log point). Foreign ownership has a particularly strong effect, associated with an 11-13.5 percentage point increase in the

probability of exporting.

These findings suggest that recent international experience, particularly in developed countries, may enhance a firm's ability or propensity to export. This could be through various channels such as international networks, knowledge of foreign markets, or exposure to international business practices. The stronger effect for more recent experience (post-1990) and for younger managers might indicate the importance of up-to-date knowledge and practices in today's global markets.

However, as with the previous analysis, we must be cautious about inferring causality. Firms intending to export might be more likely to hire managers with international experience, or there might be unobserved factors influencing both international experience and export status. Future research could explore these relationships further, potentially using methods that can better address issues of endogeneity.

	(1)	(2)	(3)	(4)	(5)
Studied abroad	-0.020				
	(0.030)				
Worked abroad	0.073***				
	(0.023)				
Worked in developed country		0.064***			
		(0.023)			
Worked in socialist country		0.021			
		(0.036)			
... in developed country before 1990			-0.092**	-0.050	-0.071
			(0.041)	(0.095)	(0.047)
... in developed country after 1990			0.105***	0.144***	0.047
			(0.026)	(0.035)	(0.037)
... in socialist country before 1990			0.007	-0.065	0.035
			(0.048)	(0.138)	(0.052)
... in socialist country after 1990			0.011	0.050	-0.050
			(0.048)	(0.067)	(0.068)
Employment (log)	1.373***	1.373***	1.373***	1.377***	1.365***
	(0.008)	(0.008)	(0.008)	(0.013)	(0.010)
Male (dummy)	0.155***	0.155***	0.155***	0.143***	0.165***
	(0.025)	(0.025)	(0.025)	(0.038)	(0.033)
CEO is in WiW (dummy)	0.063***	0.063***	0.063***	0.080***	0.048***
	(0.009)	(0.009)	(0.009)	(0.014)	(0.011)
Age (years)	0.011	0.011	0.012	0.051	-0.012
	(0.007)	(0.007)	(0.007)	(0.033)	(0.028)
Age squared	-0.000***	-0.000***	-0.000***	-0.001*	-0.000
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Foreign ownership (dummy)	0.548***	0.547***	0.546***	0.569***	0.512***
	(0.054)	(0.054)	(0.054)	(0.071)	(0.080)
Constant	8.163***	8.160***	8.122***	7.295***	8.924***
	(0.194)	(0.194)	(0.194)	(0.659)	(0.862)
Observations	53,896	53,896	53,896	23,925	29,969
R-squared	0.595	0.595	0.596	0.565	0.624
Fixed Effects	NACE	NACE	NACE	NACE	NACE

Robust standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

Table 2: Foreign experience and productivity. Dependent variable is log sales in each model. Each specification includes two-digit NACE sectoral fixed effects. Model 4 limits the sample to individuals aged 50 or younger. Model 5 includes individuals older than 50 years.

	(1)	(2)	(3)	(4)	(5)
Studied abroad	0.011**				
	(0.005)				
Worked abroad	0.017***				
	(0.004)				
Worked in developed country		0.023***			
		(0.004)			
Worked in socialist country		0.001			
		(0.007)			
... in developed country before 1990			-0.002	-0.033**	0.005
			(0.007)	(0.015)	(0.008)
... in developed country after 1990			0.024***	0.025***	0.020***
			(0.004)	(0.006)	(0.007)
... in socialist country before 1990			0.001	-0.043**	0.012
			(0.009)	(0.019)	(0.011)
... in socialist country after 1990			-0.006	0.012	-0.029**
			(0.009)	(0.012)	(0.012)
Employment (log)	0.104***	0.104***	0.104***	0.105***	0.102***
	(0.002)	(0.002)	(0.002)	(0.003)	(0.003)
Male (dummy)	0.009**	0.008**	0.008**	0.009	0.008
	(0.004)	(0.004)	(0.004)	(0.006)	(0.006)
CEO is in WiW (dummy)	0.002	0.002	0.002	0.002	0.001
	(0.002)	(0.002)	(0.002)	(0.002)	(0.002)
Age (years)	0.001	0.001	0.001	-0.002	0.001
	(0.001)	(0.001)	(0.001)	(0.005)	(0.005)
Age squared	-0.000	-0.000	-0.000	0.000	-0.000
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Foreign ownership (dummy)	0.118***	0.118***	0.118***	0.107***	0.135***
	(0.011)	(0.011)	(0.011)	(0.013)	(0.017)
Constant	0.020	0.019	0.018	0.064	0.017
	(0.034)	(0.033)	(0.034)	(0.105)	(0.151)
Observations	63,186	63,186	63,186	28,396	34,788
R-squared	0.247	0.247	0.247	0.229	0.269
Fixed Effects	NACE	NACE	NACE	NACE	NACE

Robust standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

Table 3: Foreign experience and exporting. Dependent variable is an exporter dummy in each linear probability model. Each specification includes two-digit NACE sectoral fixed effects. Model 4 limits the sample to individuals aged 50 or younger. Model 5 includes individuals older than 50 years.

4 Conclusion

The transition from communist to market economies provides a unique setting to examine the impact of institutional environments on talent development and allocation. In this paper, we examined the impact of a manager's international experience on firm performance and export behavior in the context of post-communist Hungary. Using a novel dataset combining biographical information of business leaders with firm-level data, we show that international experience, particularly in developed countries after 1990, significantly enhances firm productivity and export propensity.

Firms with managers who worked abroad saw a 7.3% increase in sales, with the effect being stronger for those with post-1990 experience in developed countries (10.5%). Younger managers, especially those aged 50 or below, benefited more from recent experience, suggesting the importance of up-to-date skills and adaptability.

Export behavior followed a similar trend: firms with managers who worked abroad were 1.7 percentage points more likely to export, with recent experience in developed countries post-1990 having the strongest impact (2.4 percentage points). Notably, experience in socialist countries or pre-1990 developed countries had little to no effect on productivity and export probability, implying that outdated practices might not transfer effectively in a modern business environment.

Other factors such as firm size, foreign ownership, and manager characteristics also contributed significantly to firm outcomes. The results suggest that international experience—especially recent and in developed countries—plays a crucial role in enhancing firm competitiveness and global engagement. Nonetheless, further research is needed to address potential endogeneity and better understand the causal relationships between international experience and firm performance.

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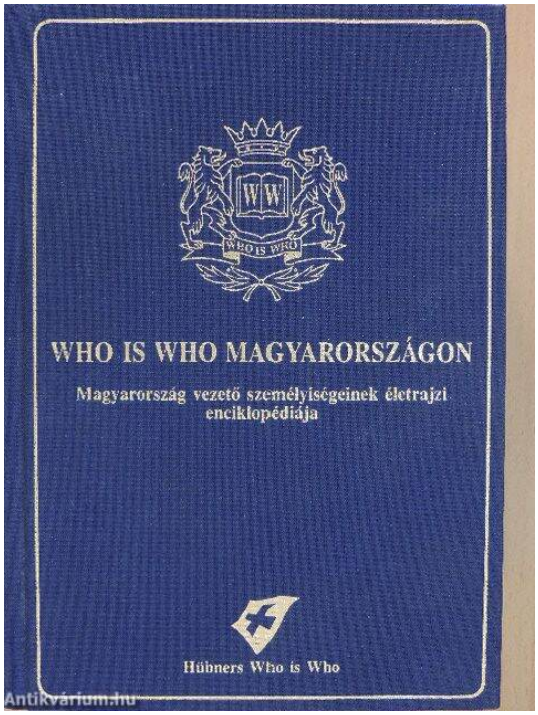
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A Data Appendix

Figure 8: Hübners Who is Who, Hungarian ed.2013





A.1 Occupation categories: relevant words/phrases

- business: ceo, entrepreneur, executive, manager, director, company, salesman, owner, business, businessman, marketing, financial, chairman, chairwoman, corporate, investment, bank, banker, sales, head of company, managing director, general director, vice president, board, merchant, trader, chief accountant, chief financial officer, HR, compliance officer, corporate, president, producer, managing director, management, admnistration, administrative

- professional: self employed, doctor, physician, surgeon, nurse, lawyer, attorney, legal, court, notary, parliament, chamber, diplomat, ambassador, politician, economist, advisor, consultant, pharmacist, dentist, medicine, urologist, pediatrician, psychologist, oncologist, psychiatrist, journalist, architect, engineer, estate, insurance, specialist, veterinarian, designer, mayor, judicial, gynecologist, consul, editor, senate, chemist, dental, clinic, counsel, counselor, internist, spokeperson, jeweler, auditor, program-

mer, analyst, dermatologist, practitioner, colonel, inspector, publisher, broker, freelance, senator, government official, editor in chief, councilor, accountant, minister, prosecutor

- art: artist, singer, poet, writer, painter, musician, pianist, cellist, composer, ballet, dancer, ballerina, actor, actress, drama, photographer, theatre, choreographer, sculptor, film director, theater, opera, soloist, lyric, songwriter, screenwriter, illustrator, filmmaker, author

- academia: academia, academic, teacher, school, lecturer, professor, emeritus, researcher, science, scientific, research, education, mathematician, historian, physicist, rector, dean, college, principal, educator, philosopher

B Additional Descriptives

Figure 9: Age at liberalization



Figure 10: Fields of talent as a share of people born in each year, by birth year

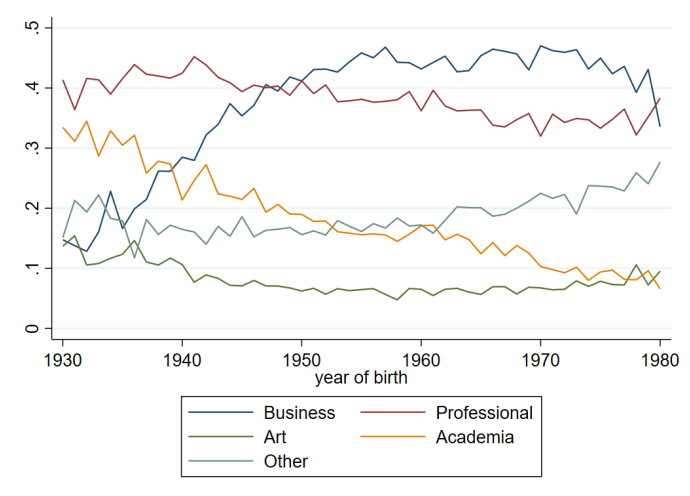


Figure 11: Share of Hungarians with and with no foreign experience

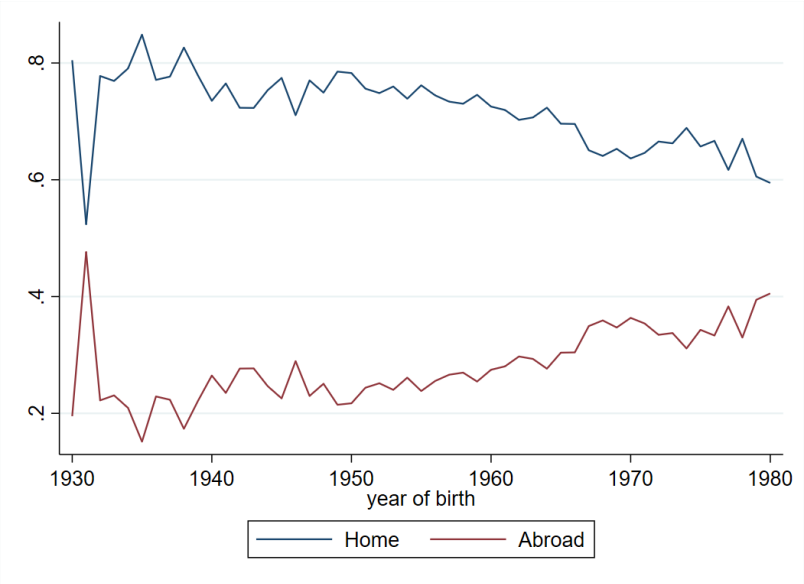


Figure 12: Share of Hungarians with foreign experience, by birth cohort

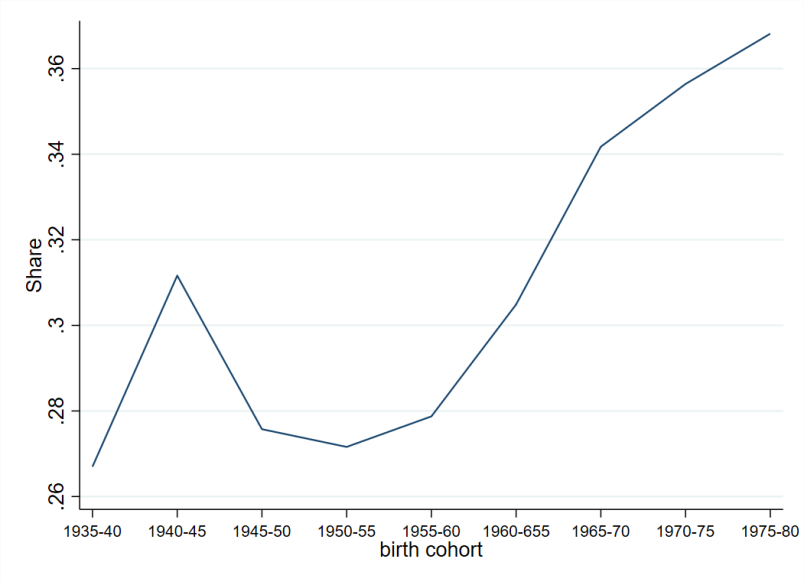


Figure 13: People abroad as share of total people recorded, by year

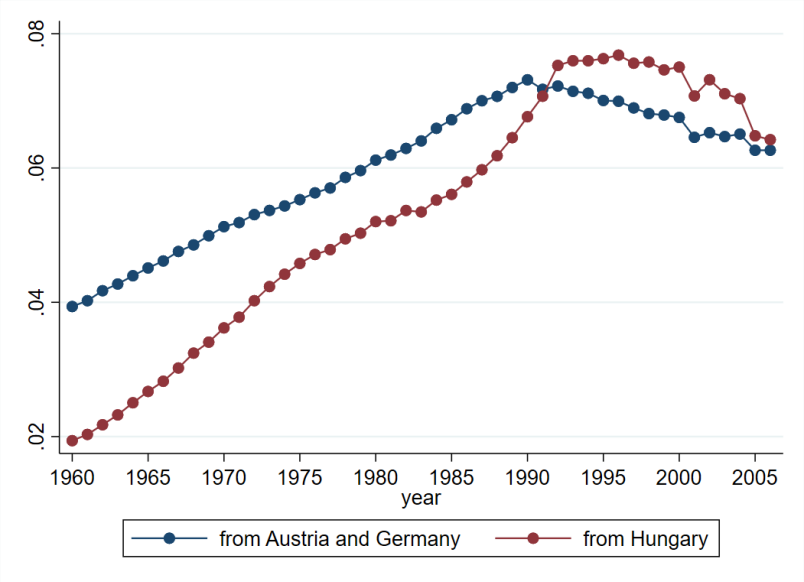


Figure 14: People abroad in a developed country as share of total people recorded, by year

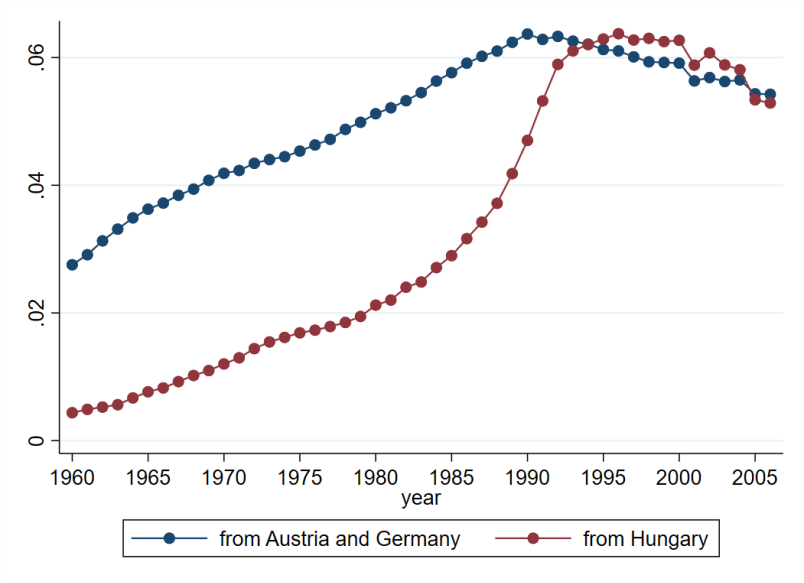


Figure 15: Average years spent abroad by business people, by year of birth

