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Cross-border migration and social mobility: regional dynamics as levers for upward social mobility?

Noame Khaldi * Mehdi Guelmamen †

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Résumé

La question de la mobilité sociale, notamment dans les régions désindustrialisées, revêt une importance cruciale pour comprendre les dynamiques économiques et sociales contemporaines. Cet article examine comment les contextes régionaux façonnent et conditionnent les trajectoires sociales des travailleurs. En utilisant des tables de mobilités intergénérationnelles et une stratégie économétrique mobilisant une fonction de contrôle, nous montrons un effet significatif des origines géographiques et sociales sur les trajectoires sociales des travailleurs. Une combinaison de facteurs économiques, géographiques et sociaux influence leur ascension sociale. La mobilité géographique et transfrontalière est un facteur déterminant de l'élévation sociale des catégories populaires. Ces conclusions contribuent à documenter l'impact des disparités régionales sur la formation et la perpétuation des inégalités socio-économiques.

Classification JEL : A14, J21, J61, P51, Z13
Mots-clés : Mobilité sociale, mobilité géographique, groupes sociaux, travail frontalier.

Abstract

The question of social mobility, particularly in deindustrialized regions, is a central issue in understanding contemporary economic and social dynamics. This article examines how regional contexts influence the social trajectories of workers. Using intergenerational mobility tables and an econometric strategy mobilizing a control function, we assess the impact of geographic and social origins on workers' opportunities for upward social mobility. A combination of economic, geographic and social factors influences their upward social mobility. Geographic and cross-border mobility is a key factor in the upward social mobility of working-class people. These findings help to shed the light on the role of regional disparities and border mobility in structuring socioeconomic inequalities.

JEL Classification: A14, J21, J61, P51, Z13
Keywords: Social mobility, geographic mobility, social classes, cross-border work.

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1 Introduction

Regional contexts play a fundamental role in shaping the social trajectories of individuals. As institutional and economic architectures, these contexts serve to structure professional opportunities, access to educational resources (Boudon, 1973) and prospects for upward social mobility. For example, children from a deindustrialized region face significant obstacles to their social mobility (Chetty et al., 2014) These barriers are reinforced by structural and institutional factors, notably employment networks (Granovetter, 1973; Hong et al., 2022) and the characteristics of local labor markets (Goldthorpe, 2016) .

These mechanisms of social reproduction are part of class relations, which we define as hierarchical groups structured by economic and sociocultural factors, based on the work of Bourdieu (1984) and Chauvel (2001). Among these classes, the working classes, mainly blue-collar and white-collar workers, are marked in particular by a tendency to reproduce the social position of their parents. This reproduction is explained by persistent inequalities in access to education, the influence of inherited habitus (Passeron and Bourdieu, 1970), and sectoral economic transformations, such as deindustrialization. This structural determinism is particularly visible in social categories from the bottom of the social hierarchy, whose social position tends to reproduce itself from one generation to the next. As a result, working-class individuals face greater economic instability and more precarious career paths (Peugny, 2013).

Existing research highlights that geographic mobility can thus play a central role in overcoming structural obstacles (Blum et al., 1985; Fielding, 1992). Some studies point out, geographic movements, particularly cross-border ones, not only meet economic needs, but also constitute an essential lever for diversifying skills and accessing more dynamic labor markets (Fol, 2009). These marketplaces, characterized by high wages and increased demand, provide opportunities for social advancement (Belkacem, 2015).

However, the real impact of this mobility on social trajectories remains debated. Some research indicates that migration offers improved career opportunity (Clément, 2015) and a social advancement (Belkacem and Pigeron-Piroth, 2016). Other works neither emphasize its contribution to perpetuating existing inequalities via occupational

downgrading, employment and heightened precarity (Malroux et al., 2023).

The question is therefore not just whether migration provides economic opportunities, but whether these opportunities are equally accessible across social groups. In particular, little attention has been paid to whether cross-border migration systematically enhances social mobility or merely redistributes inequalities across borders.

The Lorraine-Luxembourg region exemplifies these dynamics. Historically industrial, the Lorraine region is marked by prolonged deindustrialization and incomplete transition to services, leading to elevated unemployment and restricted professional opportunities (Raggi, 2013). At the same time, Luxembourg, has emerged as a dynamic financial cluster supported by foreign capital and a growing cross-border workforce (Weides, 1999). Although offering economic opportunities, this cross-border labor market reinforces a phenomenon of segmentation, which perpetuates structural inequalities and restricts social mobility prospects. Social origin, industry, and institutional limitations affect the advantages of migration. Due to job segmentation and labor market frictions, some individuals from the working-class see transnational employment as an opportunity of upward mobility, whereas others, especially those from higher socioprofessional categories, face risks of downward mobility (Donovan et al., 2023).

A fundamental issue is brought up by this significant economic disparity and segmentation : does cross-border migration really promote social progress, or does-it mostly serve to transfer inequality across national borders ?

This study is also part of a broader reflection on migration as a lever for social mobility. This research focuses on Lorraine and Luxembourg case, however analogous processes may be found in other global locations.

This study investigates the following research question : To what extent does cross-border migration influence the social mobility trajectories of Lorrainian workers ? Does it facilitate upward mobility, or does it reinforce structural inequalities by benefiting certain social groups more than others ?

We show that workers from the working class benefit more from geographic mobility, as it provides opportunities for upward mobility, whereas higher socio-professional categories may experience occupational downgrading. Finally, this paper highlights that while migration can mitigate certain inequalities, it does not fundamentally challenge

the socio-economic structures that perpetuate these disparities.

The article is organized as follows. Section 2 describes the theoretical framework and our research hypotheses. Section 3 presents the stylized data and facts. Section 4 describes the empirical strategy and results. Finally, our conclusions and perspectives for future research are provided in 5.

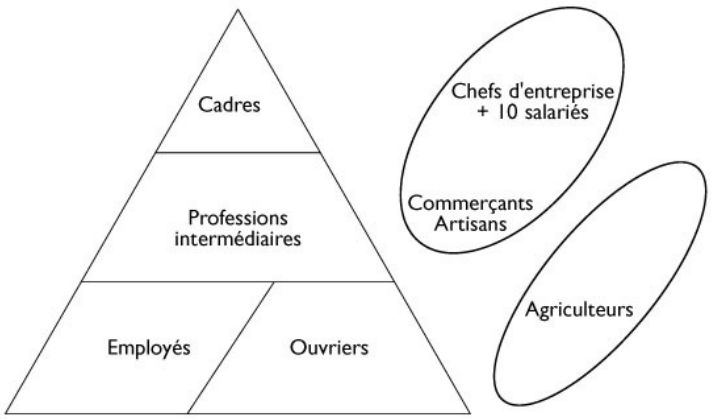
2 Geographic and social mobility : theoretical insights into regional disparities

2.1 Social strafication and classification

The analysis of social mobility requires a precise definition of social class structures and their hierarchy. Social stratification refers to a grouping of people within a structured social hierarchy, influenced by economic, cultural, and institutional variables (Bourdieu, 1984; Chauvel, 2001). Capturing both continuities and ruptures in social trajectories, social stratification provides a framework that offers the structural foundation for comprehending how peoples' social positions change throughout generations. From this perspective, intergenerational mobility shows how people experience upward or downward social movement in relation to their parents. It can also show intergenerational immobility (social reproduction).

To structure the analysis of social trajectories, we use two complementary approaches. On the one hand, the INSEE's socioprofessional group classification (GSP), which aggregates workers into six categories : farmers, operators, craftspeople, shopkeepers, manual workers, employees, intermediate professions and managers and higher intellectual professions. This social classification is firstly used to produce the mobility tables. Secondly, the Chauvel (2001) classification is used to rank the social groups according to an intergenerational pyramid.

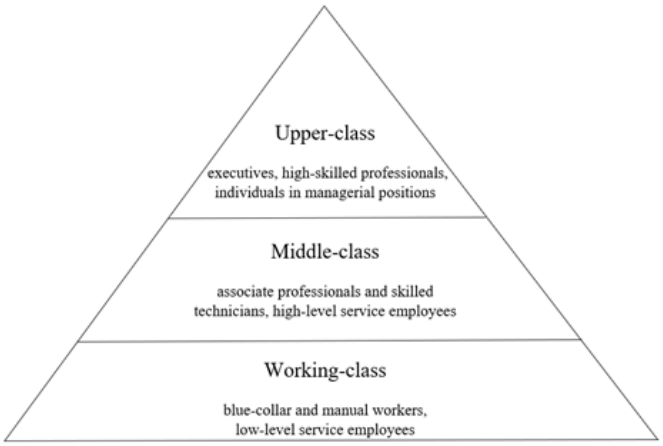
FIGURE 1 : Social hierarchy according to Chauvel (2001)



This stratification highlights the dynamics of social reproduction and opportunities for upward mobility, while incorporating factors such as globalization and the rise of precarity. However, the floating categories (craftspeople, shopkeepers, farmers) are excluded because of their heterogeneity in terms of income, cultural capital and social status. This exclusion is intended to enhance analytical clarity and empirical relevance.

Following Chauvel (2001) and the INSEE nomenclature, we categorize workers into three main social groups : upper-class, middle-class, and working-class. These classifications allow us to measure the extent to which cross-border migration contributes to social mobility and whether it differs by occupational sector and social background.

FIGURE 2 : Social class structure, based on Chauvel (2001) classification



Although social categorization provides a framework for analyzing intergenerational social mobility, class borders and job patterns have been reshaped by economic transformations. Since the 1980's and 1990's, shifts in the wage-earning society have

strengthening the connection between labor market dynamics and social inequalities (Maurin, 2021), raising critical questions about the relationship between employment and social stratification. These transformations have been widely analyzed by sociologists and economists, who highlighted the key role of work shaping social trajectories and redefining hierarchies between groups.

Social mobility, understood as the ability of individuals to move up or stay on the social ladder, is thus a crucial indicator of employment dynamics and socioeconomic transformations. In deindustrialized areas, the decline of a stable working-class jobs and positions has led to increased occupational insecurity and reduced opportunities for upward mobility (Goldthorpe, 1960). Regional disparities further shape these trajectories, as illustrated by the Lorraine-Luxembourg case : while deindustrialization in Lorraine has restricted professional advancement, Luxembourg's border financial sector has created alternative employment pathways. Although qualifications affect access to the labor market and career paths, they do not entirely explain intergenerational social mobility. This paper emphasizes the investigation of social hierarchy, rather than focusing on sectoral mobility. The objective is to analyze how cross-border mobility alters social positions, rather than its impact on skill-based professional progression.

These dynamics serve the construction of the hypothesis examined in this work and demonstrate the complex relation between geographic mobility, social reproduction, and economic structures.

2.2 Economic regionalism and labor market distortions

The spatial organization of economic activities is an important determinant of regional inequalities and employment dynamics (Krugman, 1991; Sheppard, 2017). Theories of unequal growth, in particular those proposed by Myrdal and Sitohang (1957) stress that economic concentration can yield two divergent outcomes : either promote beneficial spillovers effects (tricke-down mechanisms) or widen territorial polarization (backwash effects). However, these conventional models were mostly relevant to industrial economies. They need to be reassessed in a globalized and financialized contemporary economy, that widely change employment structures. Instead of promoting broad-based regional development, financial centers can reinforce labor market segmentation (Sassen,

2001; Askenazy, 2004) and reshape mobility trajectories.

In these globalized areas, economic gains are concentrated in specific high-value sectors, leaving peripheral regions, less integrated and structurally disadvantaged. This argument is furthered by Amin (1996), who asserts that although peripheral areas continue to be structurally dependent on these dominating center economies, which commonly capture the majority of the benefits of economic integration. This framework is pertinent to cross-border labor markets, where integration often reinforce unequal specializations between territories, instead of creating convergence. In the Lorraine-Luxembourg case, Lorraine is still a dependent labor pool, providing a workforce centered on support sector jobs (Belkacem and Pigeron-Piroth, 2016).

Financialization has reconfigured employment structures (Askenazy, 2004), reinforcing sectoral polarization between high-value, knowledge-intensive occupations and low-skilled, precarious professions. Financial centers create highly stratified labor markets, which alter traditional mobility pathways. Financial hubs do not systematically provide opportunities for upward mobility for all workers, in contrast to industrial centers that traditionally produced production-based spillovers and stable working-class jobs. Rather, they often concentrate high-skilled occupations while pushing other workers into support-sector. In this context, mechanisms of "pooling" and "pushing" (Combes and Duranton, 2006) can be observed. Luxembourg's finance and support service sector acts as a high-value economic hub and attracts high-skilled professionals, either middle and low-skilled workers from Lorraine are overrepresented in support functions. These differentiated outcomes may challenge the trickle-down assumption : while workers from Lorraine constitute almost one-quarter of the Luxembourg's total labor force, the distribution of economic benefits remains stratified.

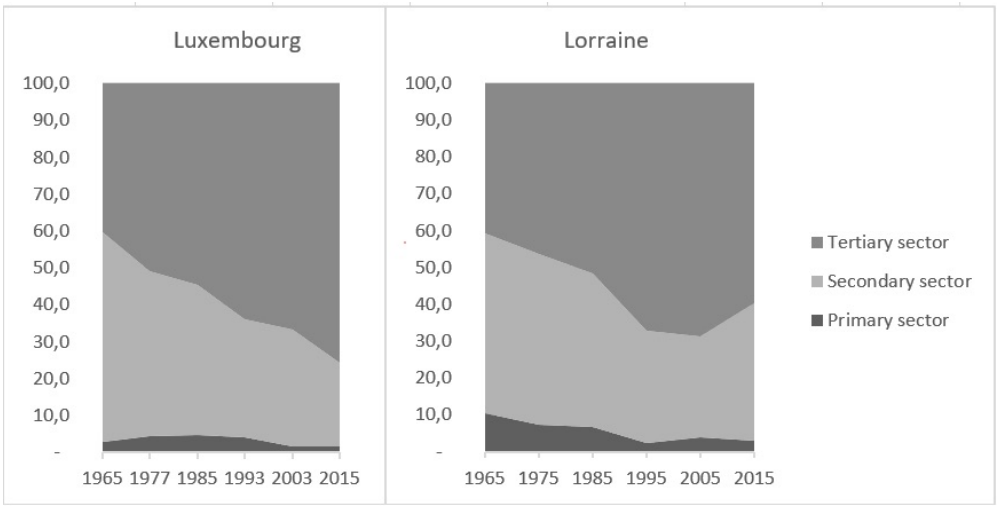
Traditional agglomeration theories (Krugman and Venables, 1996) stress how economic concentration increases productivity and wages, but do not fully explain the sectoral stratification in transnational and cross-border labor markets. These cross-border labor markets may strengthen occupational frictions rather than create broad-based economic convergence, which restrict migrants workers ability to move up to the social ladder. The Lorraine-Luxembourg labor market exemplifies those financialized hubs do not include adjacent areas into their development dynamics, but instead establish a dual labor

structure.

In contrast to short-term professional advancements linked to skills, this research focuses in intergenerational social mobility. Although individual qualifications influence labor market pathways, they do not entirely explain the structural factors affecting mobility. The socio-economic framework that supports cross-border labor markets, especially the interaction between regional economic specialization and inherited social status, are crucial for elucidating long-term mobility results. This research prioritizes a class-based analysis to examine the interaction between cross-border migration and social stratifications. Over and above the question of whether cross-border workers improve their incomes thanks to skill differentials, our question is whether geographic mobility enables them to overcome the social and geographical determinism that characterizes the historical structure of the Lorraine labor market.

Instead of a linear trajectory of economic integration, the Lorraine-Luxembourg labor market illustrates the dual effects of financialization and regional labor segmentation. The following figure illustrates how this segmentation materializes over time in the sectoral composition of employment, revealing distinct and persistent economic specializations in Lorraine and Luxembourg (figure 3). It raises essential questions about the ability of cross-border migration to ameliorate social trajectories of workers. It also provides the basis for our assumptions about the impacts of migration on social mobility.

FIGURE 3 : Share of economic sectors in total employment, Luxembourg and Lorraine (1965 - 2020)



Source : Authors, based on data from STATEC (Share of economic sectors in total employment, 1871-2020) and INSEE (Annual Employment Surveys – EEC – 1965 - 2020)

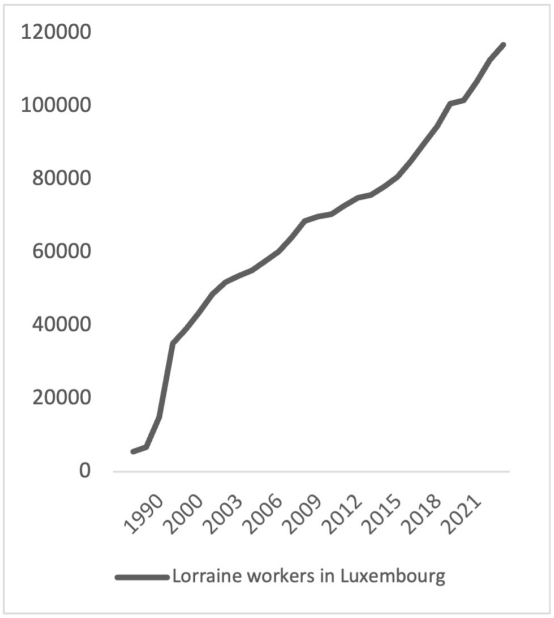
2.3 Geographic mobility in financialized economies

International labor markets have been significantly reorganized by economic globalization and financialization, increasing worker mobility toward financial centers. Global cities like London, New-York, Singapore, and Dubai draw talented professionals, especially in finance, law, and business services, while absorbing a transnational workforce into lower-skilled service and support-sector positions (Sassen, 2013; Yeoh, 2006).

Although the literature predominantly addresses permanent migration to financial centers, an important alternative form of labor mobility has arisen : cross-border mobility. This type of migration is especially significant in European financial centers, where individuals from border areas work in high-wage labor markets without establishing permanent residency (Belkacem and Pigeron-Piroth, 2016). Cross-border mobility enables workers to keep residency in lower-cost areas while accessing higher wages in financial center, in contrast to long-term migration.

The cross-border migrations flow from Lorraine to Luxembourg exemplifies labor mobility within a financialized economy (figure 4). The economic disparity between the two regions have made Luxembourg an attractive employment hub for Lorraine workers, who commute daily in pursuit of improved wages and job stability. Still, prior research suggests that the global and financialized labor market does not provide uniform benefits. The pushing and pooling mechanisms (Combes and Duranton, 2006) create a hierarchical structure of cross-border employment, with mobility gains differing based on the sector of employment, the social origin, and the skill level. The following section will further analyze the social implications of geographic mobility.

FIGURE 4 : Trend in the number of cross-border commuters from Lorraine to Luxembourg



Source : Authors, based on CCSS and IGSS data (interactive employment tables 2009 – 2023) and INSEE data (1982 – 2008 censuses)

2.4 Geographical space, social space, and concomitant movements

The relationship between geographic mobility and social mobility is a key issue in regional studies. For Noiriel (1988) and Bidet (2018), movements in geographical space can be interpreted as materializations of movements in social space. These concomitant movements reveal how economic and spatial transformations intertwine to redefine professional trajectories. Crossing a geographic border involves more than physical movements ; it requires a restructuring within an organized labor market, where class hierarchies are either perpetuated, altered, or challenged. Bourdieu (1984) emphasizes that social space is interdependent with physical space, and economic migration may be seen as a dual movement, seeking advancement in both geographic and social hierarchies.

Fol (2009) shows, for example, that geographic mobility is a strategic lever for accessing more dynamic labor markets and diversifying workers' skills. As a financial hub, Luxembourg offers opportunities that Lorraine, marked by its industrial decline, is struggling to compete with. However, studies in economy, geography and sociology point an ambivalence of geographic mobility. In cross-border labor markets, economic hierarchies are spatially organized, indicating that the advantages of mobility are contingent upon the alignment of migration with the institutional and economic framework of the

destination area.

In our case, in the one hand, it breaks the cycles of social reproduction in working-class categories by enabling workers to move into better-paid professions. On the other hand, it exposes upper socio-professional categories to forms of downgrading due to the specific characteristics of the Luxembourg labor market, which is more oriented towards support service functions. These concurrent movements shed light on the tensions and opportunities generated by the economic architectures of the two areas. Crevoisier et al. (2011) also emphasizes that border areas operate as hybrid economic environments, whereby the principles of capital accumulation and territorial integration coexist with increased labor frictions.

These dynamics are not exclusive to our case but signify a wider global phenomenon, observed in other financialized economies. Worldwide financial center often demonstrates similar mechanisms. Hong Kong draws financial experts while limiting Southeast Asian migrants to domestic and service employment (Skeldon, 1995). Singapore attracts elite international talent in finance and technology while implementing stringent labor regulations for lower-skilled foreigners (Yeoh, 2006). For working-class migrants, geographic mobility improve income but does not systematically lead to social progression.

The social impact of geographic mobility is influenced by established class relations and labor market segmentation. Existing social stratifications can then be preserved or redistributed. An essential issue is not only whether migration promotes employment and upward mobility, but also rather who reaps the advantages and under what circumstances. These theoretical insights provide a basis for the subsequent empirical study.

2.5 Research hypotheses

Building in the lights of theoretical insights discussed in the previous sections, this research proposes to examine the impact of cross-border mobility on social mobility trajectories within a financialized transnational labor market. Using the Lorraine-Luxembourg case study, we explore whether migration acts as a level for upward mobility or reorganizes existing socioeconomic disparities.

Hypothesis 1 : *Lorraine is characterized by strong social determinism, where class background significantly constrains occupational mobility.*

Hypothesis 2 : *Cross-border mobility acts as a lever for upward social mobility, enabling workers in Lorraine to enter higher socioprofessional categories than their original one.*

Hypothesis 3 : *The impact of cross-border mobility on social mobility is contingent upon the social origin of the workers.*

These research hypotheses are tested by a quantitative approach, combining the construction and analysis of mobility tables and an econometric model based on longitudinal cross-sectional data. The aim of this empirical analysis is to evaluate the effects of social background, sectoral employment, and cross-border mobility on intergenerational social mobility trajectories.

3 Data and stylized facts

3.1 Data presentation

The data used in this study come from the seven versions of the INSEE 'Formation, Qualification Professionnelle' (FQP) survey, carried out in 1964, 1970, 1977, 1985, 1993, 2003 and 2014. They also come from the 'Emploi' surveys from 1960 to 2022.

Considered to be one of the main sources of information on occupational and social mobility, the FQP survey is based on a questionnaire divided into five parts : initial training, continuing training, occupational mobility, social origin and earned income. The FQP survey is the only French survey to link these five components and observe their interactions. The identical repetition of certain questions from one survey to the next enables precise temporal comparisons to be made on these different themes. This databases has been the fondation for a amount of resarch into career paths of workers, their social backround and their success at school (Monso, 2008; Boutchenik et al., 2015). As a complement, we also use data from INSEE's 'Emploi' (EE) and 'Emploi en continu' (EEC) surveys to obtain more extensive number of observations and render the quantitative and econometric processing more precise. Conducted annually, this survey

provides a regular measure of employment and enables the situation of individuals in the labor market to be observed, both structurally and cyclically.

The survey unit is the individual, drawing on the FQP and Annual Employment databases, which contain an annual sample of around 40,000 individuals, representative of the French population. Adjustments made by INSEE reduce non-response bias and sampling fluctuations.

3.2 Mobility tables

A study of mobility tables in Lorraine and the rest of France (figures 5 and 6) highlights the dynamics of social reproduction and upward and downward mobility influenced by regional structures and economic change. Comparative analysis over half a century provides an insight into the evolution of socioeconomic dynamics in a context of deindustrialization and tertiarization.

Within recruitment tables, our results show a gradual decline in the proportion of "farmers-operators" whose fathers were also "farmers-operators" in Lorraine from 1965 to 2015. This decline is similarly observed in the socioprofessional categories of "craftsmen and shopkeepers" and "employees". These findings align with the work of Mendras (1970) on the decline of rural and artisanal categories. However, the proportion of "blue-collar workers" whose fathers were also a "blue-collar worker" has increased, as has the proportion of "managers and higher intellectual professions (HIP)" and "intermediate professions" whose fathers belonged to the same socioprofessional category. The rise in self-recruitment whithin these two categories echoes the analyses of Passeron and Bourdieu (1970). Illustrating social reproduction, the self-recruitment observed among "blue-collar workers" corroborates the findings of Goldthorpe (2007) on dynamics of reproduction in industrialized regions. Regional industrial concentration may thus reinforce trajectories of social immobility among blue-collar workers.

FIGURE 5 : Recruitment table
(Metropolitan France excluding Lorraine)

Social destination		Social origin: Self-employed farmers and agricultural producers	Craftsmen and small business self-employed workers	Higher-level professionals, executives and managers	Middle-level professionals and skilled technicians, high-level service workers	White-collar and low-level service workers	Blue-collar and manual workers
Self-employed farmers and agricultural producers	***1965***	88,52	3,50	0,70	0,33	1,51	5,45
	1977	87,56	3,61	0,79	0,30	1,43	6,32
	1985	84,85	3,35	1,00	1,03	1,58	8,19
	1995	81,01	4,44	1,39	1,80	2,32	9,05
	2005	76,57	5,76	2,41	1,87	2,28	11,11
	2015	74,06	4,75	2,48	2,38	3,17	13,17
Craftsmen and small business self-employed workers	***1965***	23,31	40,86	4,03	2,64	8,34	20,81
	1977	22,23	37,72	3,96	3,31	8,34	24,44
	1985	16,68	31,84	4,88	7,02	9,05	30,52
	1995	15,25	27,78	6,71	7,76	11,04	31,45
	2005	9,13	28,99	9,24	9,45	8,29	34,90
	2015	10,16	27,42	12,54	11,59	7,44	30,84
Higher-level professionals, executives and managers	***1965***	10,57	21,60	**28,54**	12,69	13,10	13,50
	1977	7,87	21,62	**28,22**	13,12	11,85	17,32
	1985	6,11	17,97	**28,53**	17,90	13,59	15,90
	1995	6,25	15,39	**28,09**	18,80	14,48	16,99
	2005	6,20	14,57	**28,45**	20,58	11,36	18,83
	2015	5,03	15,63	**33,01**	20,40	8,53	17,40
Middle-level professionals and skilled technicians, high-level service workers	***1965***	14,31	16,85	11,42	**11,70**	16,80	28,92
	1977	13,24	15,37	12,48	**12,05**	15,84	31,02
	1985	10,90	14,59	10,90	**17,03**	14,73	31,85
	1995	10,14	13,29	10,99	**17,57**	16,91	31,10
	2005	7,58	12,54	12,68	**20,59**	13,32	33,29
	2015	6,58	14,64	16,63	**19,86**	10,56	31,72
White-collar and low-level service workers	***1965***	22,93	14,54	3,99	5,44	**15,97**	37,12
	1977	20,00	14,07	4,98	6,78	**14,95**	39,23
	1985	12,62	11,89	4,67	11,26	**15,93**	43,63
	1995	11,67	11,37	5,27	10,77	**17,29**	43,62
	2005	8,86	10,64	6,87	12,91	**14,29**	46,43
	2015	8,27	13,55	8,18	12,78	**12,42**	44,79
Blue-collar and manual workers	***1965***	29,58	10,53	1,34	2,26	10,40	**45,90**
	1977	26,30	9,82	1,58	2,66	9,40	**50,25**
	1985	16,12	8,31	1,52	6,24	9,99	**57,83**
	1995	14,20	9,28	1,75	6,15	12,30	**56,32**
	2005	9,84	9,45	3,00	9,00	9,49	**59,22**
	2015	10,06	11,92	4,51	9,79	9,58	**54,14**
Total	***1965***	28,75	15,96	6,93	5,43	11,59	**31,33**
	1977	25,71	14,92	7,64	6,24	11,11	**34,38**
	1985	18,01	12,76	6,69	10,36	12,16	**40,03**
	1995	14,39	12,56	8,07	11,23	14,48	**39,27**
	2005	10,00	12,35	10,56	14,41	11,83	**40,85**
	2015	9,21	14,52	13,65	14,80	10,20	**37,62**

Reading: In 1985, 57.83% of non-Lorraine manual workers had a father who was also a manual worker.
Population: Non-Lorraine labor force respondents.
Source: Authors' calculations based on the FQP surveys (1965, 1977, 1985) and the Emploi Surveys (1995, 2005, 2015).

FIGURE 6 : Recruitment table
(Lorraine)

Social destination		Social origin: Self-employed farmers and agricultural producers	Craftsmen and small business self-employed workers	Higher-level professionals, executives and managers	Middle-level professionals and skilled technicians, high-level service workers	White-collar and low-level service workers	Blue-collar and manual workers
Self-employed farmers and agricultural producers	***1965***	**80,00**	2,22	-	2,22	4,44	11,11
	1977	**77,97**	3,39	1,69	-	6,78	10,17
	1985	**80,41**	3,38	2,03	2,03	2,03	10,14
	1995	**73,17**	7,32	2,44	2,44	2,44	12,20
	2005	**81,25**	3,13	-	-	-	15,63
	2015	**76,92**	-	-	-	7,69	15,38
Craftsmen and small business self-employed workers	***1965***	17,43	41,28	1,83	0,92	9,17	29,36
	1977	13,41	45,12	7,32	2,44	7,32	24,39
	1985	12,08	30,87	5,37	10,74	10,74	30,20
	1995	9,43	25,79	3,14	11,32	8,81	41,51
	2005	11,36	22,73	9,09	6,82	9,09	40,91
	2015	3,77	22,64	7,55	16,98	4,72	44,34
Higher-level professionals, executives and managers	***1965***	10,95	18,25	**25,55**	10,22	13,14	21,90
	1977	11,01	14,68	**25,69**	13,76	12,84	22,02
	1985	2,61	22,22	**18,95**	22,22	12,42	21,57
	1995	4,17	12,44	**26,67**	18,67	16,00	21,78
	2005	4,17	9,17	**20,00**	20,00	15,83	30,83
	2015	3,76	15,02	**27,70**	14,08	9,86	29,58
Middle-level professionals and skilled technicians, high-level service workers	***1965***	9,41	11,88	8,91	**11,88**	19,31	38,61
	1977	8,90	13,09	8,38	**14,66**	13,61	41,36
	1985	8,44	9,52	5,63	**18,18**	14,50	43,72
	1995	7,17	10,11	9,01	**20,04**	14,89	38,79
	2005	6,07	7,69	6,88	**19,84**	7,69	51,82
	2015	4,29	9,71	13,32	**21,44**	10,38	40,86
White-collar and low-level service workers	***1965***	12,74	9,91	2,36	4,25	**13,21**	57,55
	1977	15,18	15,95	3,50	3,89	**12,84**	48,64
	1985	10,02	9,86	2,50	13,77	**13,77**	50,08
	1995	6,08	8,19	4,71	13,65	**13,77**	53,60
	2005	5,24	6,73	3,99	12,97	**11,72**	59,35
	2015	3,26	7,47	6,70	13,60	**12,64**	56,32
Blue-collar and manual workers	***1965***	20,04	7,56	0,53	2,46	7,91	**61,51**
	1977	17,23	7,77	0,63	1,68	8,82	**63,87**
	1985	12,36	6,03	0,49	6,23	9,79	**65,08**
	1995	6,66	5,86	1,49	6,08	10,91	**69,00**
	2005	7,03	6,49	1,62	10,54	9,73	**64,59**
	2015	5,11	7,66	4,26	10,85	9,57	**62,55**
Total	***1965***	18,05	12,48	4,95	4,95	11,15	**48,43**
	1977	17,63	13,46	5,37	5,37	10,65	**47,53**
	1985	14,40	9,88	3,40	11,24	11,40	**49,69**
	1995	7,60	9,22	6,27	12,59	12,77	**51,55**
	2005	8,07	7,58	5,52	13,76	10,30	**54,78**
	2015	4,64	9,85	10,24	15,00	10,41	**49,86**

Reading: In 1985, 65.08% of Lorraine manual workers had a father who was also a manual worker.
Population: Lorraine labor force respondents.
Source: Authors' calculations based on the FQP surveys (1965, 1977, 1985) and the Emploi Surveys (1995, 2005, 2015).

Despite a general decline in the social reproduction of workers, in Lorraine and outside Lorraine, the destinies tables (figures 7 and 8) show that Lorraine retains a stronger concentration of workers in blue-collar occupations than the rest of the territory. Indeed, the proportion of workers whose son occupied the same employment category fell from 56.73% in 1965 to 33.37% in 2015. This proportion falls from 52.44% to 31.36% in the rest of the country. These two results confirm the postulates formulated by Chauvel (2006) and Peugny (2009) on the impact of deindustrialization and erosion of the traditional working class.

In continuing the observation of the destinies tables, we note that, with the exception of the socioprofessional category of empoyees, the share of workers who themselves occupied the same socio-professional category as their father has decreased over this period. The reduction is particularly strong for workers from the "Managers and higher intellectual professions" category, with a loss of 22.96 percentage points in Lorraine, compared with 10.84 percentage points in the rest of France.

Despite the observation that the elite reproduction that tends to diminish over time, local economic limits have made the position of higher socioprofessional category less stable. This observation refers to structural limitations in the territories in economic decline, partly validating the conclusions of Chetty et al. (2014). The results are also verifiable when we distinguish social downgrading trajectories in Lorraine. The destiny table for this region in economic decline reveals an increase in the share of descendants of "managers and HIP" who became "employees" (+11.4 percentage points) over 50 years of surveys. This increase remains higher than the rest of the country (+8.22 percentage points). The downward mobility is also observable for workers from the socioprofessional category of "intermediate professions" increasingly joining the category of "employees" from 1965 to 2014, in Lorraine and outside Lorraine. This outcome in the destiny table is in continuity with the work on the vulnerability of intermediate classes in relation to economic transformations of Maurice (1989).

If we now look at social upward trajectories, the destiny tables reveal a historical progression in the share of descendants of "farmers" and "blue-collar workers" becoming "intermediate professions" or "managers and HIP", in both territories. The recruitment tables also shown an increase in the proportion of managers with working-class fathers,

from 21.90% to 29.58% in Lorraine. This invites us to consider upward mobility opportunities for the working classes in a context of economic transition (Breen, 2005). However, upward mobility seems to be slowing down for the socioprofessional categories of "intermediate professions" and "employees". An observable finding in the destiny tables (decrease in the share of descendants of "intermediate professions" and "employees" becoming "managers and HIP") and recruitment tables (decrease in the share of "managers and HIP" with an "employee", "farmers" or "craftsman" father). The upward trajectories of workers from these social categories therefore seem to be slowed down. The magnitude of the effects being stronger in Lorraine, these results may support the existence of limits, or a glass ceiling, in regions with low economic diversification and where tertiary activity is more restricted (Chauvel, 2006).

The results of the mobility tables also express a structural recomposition within the two generations. The shares of "farmers, operators" and "craftsmen, shopheepers" are reduced to the benefit of "intermediate professions" and "employees". Although there is a superposition of national trends in Lorraine, the region retains structural peculiarities. One of them is the importance of worker social reproduction and the increased vulnerability of the upper classes. Overall, these preliminary results highlight the essential nature of regional specificities in the study of social mobility.

Let us now observe the impact of cross-border work on social mobility, by analysis of the destiny tables of Lorraine residents working in Luxembourg (figure 9).

FIGURE 7 : Destiny table
(Metropolitan France excluding Lorraine)

Social destination	Social origin: Self-employed farmers and agricultural producers	Craftsmen and small business self-employed workers	Higher-level professionals, executives and managers	Middle-level professionals and skilled technicians, high-level service workers	White-collar and low-level service workers	Blue-collar and manual workers	Total
Self-employed farmers and agricultural producers	***1965*** **29,64**	2,11	0,97	0,59	1,25	1,67	9,63
	1977 **31,04**	2,21	0,94	0,44	1,17	1,67	9,11
	1985 **31,81**	1,77	1,01	0,67	0,88	1,38	6,75
	1995 **21,98**	1,38	0,67	0,63	0,63	0,90	3,90
	2005 **17,85**	1,09	0,53	0,30	0,45	0,63	2,33
	2015 **16,73**	0,68	0,38	0,33	0,65	0,73	2,08
Craftsmen and small business self-employed workers	***1965*** 8,27	26,09	5,92	4,96	7,33	6,77	10,19
	1977 7,25	21,20	4,35	4,45	6,29	5,96	8,38
	1985 7,06	19,02	5,56	5,16	5,67	5,81	7,62
	1995 7,61	15,88	5,97	4,96	5,48	5,75	7,18
	2005 5,40	13,87	5,17	3,88	4,14	5,05	5,91
	2015 7,18	12,29	5,98	5,09	4,75	5,33	6,51
Higher-level professionals, executives and managers	***1965*** 4,48	16,51	**50,20**	28,51	13,78	**5,26**	12,20
	1977 3,97	18,81	**47,92**	27,28	13,85	**6,54**	12,98
	1985 2,89	12,02	**36,40**	14,74	9,53	**3,39**	8,53
	1995 5,09	14,36	**40,78**	19,61	11,72	**5,07**	11,72
	2005 9,39	17,89	**40,84**	21,66	14,56	**6,99**	15,16
	2015 8,88	17,51	**39,36**	22,42	13,62	**7,53**	16,27
Middle-level professionals and skilled technicians, high-level service workers	***1965*** 8,12	17,22	26,86	35,16	23,65	15,05	16,31
	1977 8,34	16,70	26,45	31,28	23,10	14,62	16,20
	1985 11,59	21,89	31,19	31,47	23,17	15,23	19,14
	1995 14,12	21,20	27,27	31,32	23,39	15,87	20,03
	2005 17,20	23,02	27,22	32,40	25,53	18,48	22,67
	2015 17,42	24,60	29,71	32,71	25,25	20,56	24,38
White-collar and low-level service workers	***1965*** 12,66	14,47	9,14	15,92	**21,88**	18,81	15,88
	1977 16,31	19,78	13,67	22,78	**28,22**	23,93	20,97
	1985 18,85	25,08	18,78	29,24	**35,23**	29,32	26,90
	1995 24,05	26,84	19,34	28,42	**35,40**	32,93	29,64
	2005 26,40	25,67	19,39	26,68	**35,97**	33,86	29,79
	2015 26,01	27,02	17,36	25,01	**35,27**	34,49	28,96
Blue-collar and manual workers	***1965*** 36,83	23,61	6,89	14,87	32,11	**52,44**	**35,80**
	1977 33,08	21,30	6,68	13,78	27,36	**47,27**	**32,34**
	1985 27,80	20,22	7,05	18,71	25,52	**44,87**	**31,06**
	1995 27,17	20,33	5,97	15,06	23,38	**39,48**	**27,53**
	2005 23,75	18,47	6,86	15,07	19,36	**34,99**	**24,14**
	2015 23,79	17,90	7,20	14,42	20,46	**31,36**	**21,79**

Reading: In 1965, 18.81% of the descendants of non-Lorraine manual workers became white-collar and low-level service employees.35.80% of non-Lorraine active workers were manual workers in 1965; by 2015, this share had decreased to 21.79%.
Population: Non-Lorraine labor force respondents.
Source: Authors' calculations based on the FQP surveys (1965, 1977, 1985) and the Emploi Surveys (1995, 2005, 2015).

FIGURE 8 : Destiny table
(Lorraine)

Social destination	Social origin: Self-employed farmers and agricultural producers	Craftsmen and small business self-employed workers	Higher-level professionals, executives and managers	Middle-level professionals and skilled technicians, high-level service workers	White-collar and low-level service workers	Blue-collar and manual workers	Total
Self-employed farmers and agricultural producers	***1965*** **15,65**	0,63	-	1,59	1,41	0,81	3,53
	1977 **22,22**	1,27	1,59	-	3,20	1,08	5,03
	1985 **32,25**	1,98	3,45	1,04	1,03	1,18	5,78
	1995 **14,93**	1,23	0,60	0,30	0,30	0,37	1,55
	2005 **26,53**	1,09	-	-	-	0,75	2,64
	2015 **12,20**	-	-	-	0,54	0,23	0,74
Craftsmen and small business self-employed workers	***1965*** 8,26	28,30	3,17	1,59	7,04	5,19	8,56
	1977 5,31	23,42	9,52	3,17	4,80	3,58	6,98
	1985 4,88	18,18	9,20	5,56	5,48	3,53	5,82
	1995 7,46	16,80	3,01	5,41	4,14	4,84	6,01
	2005 5,10	10,87	5,97	1,80	3,20	2,71	3,62
	2015 4,88	13,79	4,42	6,79	2,72	5,33	6,00
Higher-level professionals, executives and managers	***1965*** 6,52	15,72	**55,56**	22,22	12,68	**4,86**	10,75
	1977 5,80	10,13	**44,44**	23,81	11,20	**4,30**	9,28
	1985 1,08	13,44	**33,33**	11,81	6,51	**2,59**	5,97
	1995 4,98	11,48	**36,14**	12,61	10,65	**3,59**	8,50
	2005 5,10	11,96	**35,82**	14,37	15,20	**5,56**	9,88
	2015 9,76	18,39	**32,60**	11,32	11,41	**7,15**	12,05
Middle-level professionals and skilled technicians, high-level service workers	***1965*** 8,26	15,09	28,57	38,10	27,46	12,64	15,86
	1977 10,57	15,82	25,40	44,44	20,80	14,16	16,27
	1985 19,40	17,39	29,89	29,17	22,95	15,87	18,03
	1995 15,31	22,54	29,52	32,73	23,96	15,47	20,56
	2005 23,17	20,65	25,37	29,34	15,20	19,25	20,35
	2015 23,17	24,71	32,60	35,85	25,00	20,54	25,07
White-collar and low-level service workers	***1965*** 11,74	13,21	7,94	14,29	**19,72**	19,77	16,64
	1977 18,84	25,95	14,29	15,87	**26,40**	22,40	21,89
	1985 17,34	24,90	18,39	30,56	**30,14**	25,14	24,94
	1995 24,38	27,05	22,89	33,03	**32,84**	31,67	30,46
	2005 21,43	29,35	23,88	31,14	**37,60**	35,79	33,03
	2015 20,73	22,41	19,34	26,79	**35,87**	33,37	29,54
Blue-collar and manual workers	***1965*** 49,57	27,04	4,76	22,22	31,69	**56,73**	**44,66**
	1977 39,61	23,42	4,76	12,70	33,60	**54,48**	**40,55**
	1985 33,88	24,11	5,75	21,88	33,90	**51,69**	**39,46**
	1995 28,86	20,90	7,83	15,92	28,11	**44,06**	**32,92**
	2005 26,53	26,09	8,96	23,35	28,80	**35,94**	**30,48**
	2015 29,27	20,69	11,05	19,25	24,46	**33,37**	**26,60**

Reading: In 1965, 19.77% of the descendants of Lorraine manual workers became white-collar and low-level service employees. 44.66% of workers in Lorraine were blue-collar and manual in 1965; by 2015, this share had dropped to 26.60%.
Population: Lorraine labor force respondents.
Source: Authors' calculations based on the FQP surveys (1965, 1977, 1985) and the Emploi Surveys (1995, 2005, 2015).

			Social origin						
			Self-employed farmers and agricultural producers	Craftsmen and small business self-employed workers	Higher-level professionals, executives and managers	Middle-level professionals and skilled technicians, high-level service workers	White-collar and low-level service workers	Blue-collar and manual workers	Total
Social destination	Craftsmen and small business self-employed workers	***1995***	0,00	16,67	0,00	0,00	0,00	0,00	0,00
		2005	0,00	0,00	0,00	0,00	0,00	3,33	0,56
		2015	0,00	0,00	8,33	0,00	0,00	9,58	2,99
		2020	0,00	0,00	4,55	4,55	0,00	3,57	2,11
	Higher-level professionals, executives and managers	***1995***	50,00	0,00	0,00	0,00	0,00	4,00	9,00
		2005	25,00	25,00	42,86	25,00	28,57	11,67	26,35
		2015	25,00	15,38	16,67	13,04	22,22	8,51	16,80
		2020	62,50	20,00	45,45	18,18	20,00	14,29	30,07
	Middle-level professionals and skilled technicians, high-level service workers	***1995***	0,00	0,00	0,00	**45,45**	0,00	4,00	1,37
		2005	25,00	25,00	14,29	**25,00**	14,29	13,33	19,49
		2015	50,00	38,46	25,00	**26,09**	11,11	17,02	27,95
		2020	12,50	46,67	27,27	**31,82**	40,00	30,95	31,53
	White-collar and low-level service workers	***1995***	0,00	66,67	100,00	36,36	**50,00**	30,00	47,17
		2005	0,00	25,00	14,29	25,00	**28,57**	20,00	18,81
		2015	25,00	30,77	25,00	13,04	**44,44**	29,79	28,01
		2020	25,00	13,33	22,73	27,27	**40,00**	29,76	26,35
	Blue-collar and manual workers	***1995***	50,00	16,67	0,00	18,18	50,00	**62,00**	**32,81**
		2005	50,00	25,00	28,57	25,00	28,57	**51,67**	**34,80**
		2015	0,00	15,38	25,00	47,82	22,22	**40,43**	**25,14**
		2020	0,00	20,00	0,00	18,18	0,00	**21,43**	**9,94**

Reading: In 2015, 40.43% of the descendants of manual workers also became manual workers, if they were from Lorraine and worked as cross-border commuters.
Population: Lorraine labor force working in the Grand Duchy of Luxembourg.
Source: Authors' calculations based on the Emploi Surveys (1995, 2005, 2015, and 2020).

FIGURE 9 : Destiny table of Lorraine's working population in Luxembourg (1995-2020)

Cross-border employment has promoted the social advancement of the descendants of workers, leading them primarly to positions that classify them as "employees" or "intermediate professions" (although the status of "Managers and HIP" remains rarer for them). Having become predominantly blue-collar workers in 1995 (62%), the share of descendants of blue-collar workers who transitionned to intermediate professions has increased (from 4% in 1995 to 30.95% in 2015). Cross-border mobility has thus contributed to a growing reduction in social reproduction within the working class in Lorraine, with a 40.57 percentage points for the descendants of blue-collar workers who exercised the same or similar blue-collar professions between 1995 and 2020.

4 Econometric specification

4.1 Variables presentation

From INSEE's FQP and Emploi databases, we define the explanatory variable *Social mobility*$_i$, which takes the value -1 for social downgrading, resulting in a move to a lower socioprofessional group in intergenerational pyramid of Chauvel (2001), 0 for social reproduction and 1 for upward social mobility.

We also integrate explanatory variables relating to the socio-economic characteristics

of workers, and control variables. Concerning geographic mobility, the variable *Geographic mobility*$_i$ takes the value 1 if the worker's place of employment is Luxembourg, and 0 otherwise. We also use the variable *Sector of activity*$_i$ to estimate the effect of belonging to the primary, secondary and tertiary sectors on the probability of social trajectory. It takes the value 1 for the primary sector, 2 for the secondary sector, and 3 for the tertiary sector. The variable *Lorraine*$_i$ is a geographic variable, allowing us to identify the impact of residing in this region. This variable allows us to examine whether social determinism is at play in this region : does being from Lorraine create opportunities for upward mobility, or does it instead increase the risk of downward mobility ?

Gender is represented by a binary variable *Gender*$_i$ (1 if man, 0 if woman). The variable *Social origin*$_i$, referring to the socioprofessional group of the worker's father, takes the value 1 for a "blue-collar worker" or "employee", 2 for "intermediate professions", and 3 for "managers and HIP". This variable is considered endogenous : we therefore use the variable *Salary*$_i$ as an instrument in the treatment of endogeneity. This econometric approach, developed by Wooldridge (2015), is detailed in the subsection 4.2.

TABLE 1 : Variables description

Variables	**Description**
Explained variable	
Social Mobility	= -1 if downgrading, 0 if reproducing and 1 if ascending.
Explanatory variables	
Social origin	= 1 if the father is a worker or employee, 2 if the father is in an intermediate profession and 3 if father is a manager or PIS.
Geographic mobility	= 1 if the workplace is Luxembourg, 0 otherwise.
Sector of activity	= 1 if primary, 2 if secondary and 3 if tertiary.
Lorraine	= 1 if the place of residence is Lorraine, 0 otherwise.
Gender	= 1 if man, 0 if woman.
Salary	Gross annual salary.

Finally, the estimates are made for each survey wave : 1965, 1977, 1985, 1995, 2005, 2015 and 2020. This approach makes it possible to identify a temporal evolution of the determinants of the social trajectory of workers, offering a longitudinal perspective on their influences.

4.2 Empirical model

To estimate the influence of social and geographic origins on the social trajectory of workers, we apply the econometric method proposed by Wooldridge (2015), which shows that in the case of endogeneity, the use of a control function is equivalent to that of an instrumental variable. More specifically, this method is similar to the 2SLS method in terms of logic and procedure. However, the control function approach has the advantage of not requiring the search for exogenous instrumental variables (external to the model), while still identifying a causal effect (Wooldridge, 2010).

4.2.1 Probability of social origin

The first step of our empirical strategy consists in estimating the probability of social origin. One of the objectives of this article is to explain the social mobility of workers, of which social origin is a potential determinant.

We consider social origin as endogenous and correct this endogeneity by a control function, represented by the following multinomial logit model :

$$P(\text{Social origin}_i = z \mid X_i) = \alpha_0 + \alpha_1 X_i + \alpha_2 \text{Salary}_i + u_i \tag{1}$$

where $z = \{1 = \text{Worker, Employee}; 2 = \text{Intermediate occupations}; 3 = \text{Managers and PIS}\}$.

X_i is a vector of explanatory variables representing the socioeconomic and geographic characteristics of individuals. The control function method requires an additional variable in the equation (1), absent from the equation (1). Here, we use $Salary_i$, assumed to be correlated with social origin but independent of social mobility (Piketty and Saez, 2014). This model is estimated for different periods (1965-2020) ; the residuals ($\hat{\mu}_i$) are then included in the estimates of the probability of social trajectory.

4.2.2 Probability of social trajectory

The second step is the estimation of the probability of social mobility, influenced by socio-economic factors, in particular the social origin of workers. Social origin presents a risk of endogeneity, such that $E(\text{Social origin}_i|\epsilon_i) \neq 0$. Thus, the estimated model is

as follows :

$$P(\text{Social mobility}_i = m \mid \text{Social origin}_i, X_i, \hat{\mu}_i) = \beta_0 + \beta_1 \text{Social origin}_i + \beta_2 X_i + \beta_3 \hat{\mu}_i + \epsilon_i \quad (1)$$

Which we can also write :

$$\text{Social mobility}_i | (\text{Social origin}_i, X_i, \hat{\mu}_i) \sim \text{multinomial}(\beta_0 + \beta_1 \text{Social origin}_i + \beta_2 X_i + \beta_3 \hat{\mu}_i) \quad (2)$$

où $m = \{-1 = \text{Downgrading}; 0 = \text{Reproduction}; 1 = \text{Ascension}\}$.

To correct for potential correlation between errors, we use the Huber-White estimator (White, 1980), ensuring heteroscedasticity-robust standard errors. Furthermore, to account for errors introduced by the control function (1), we apply a bootstrap of 1000 replications to the estimated standard errors, reinforcing the robustness of the model results.

4.3 Results

Table 2 presents the results of the model estimations (1), determining the probability of social trajectory according to the socioeconomic characteristics of workers. The econometric results show a significant effect of social origin on the trajectories of downgrading and upward mobility. The coefficients associated with the blue-collar or white-collar origin indicate that there is a lower probability of upward mobility for the descendants of blue-collar workers or employees. In addition, these estimates confirm the results of Passeron and Bourdieu (1970) and Bourdieu (1979), stating that the descendants of blue-collar and white-collar workers have a tendency towards social reproduction.

The analysis also reveals a significant link between cross-border work and the probability of upward social mobility. The estimated coefficients for the variable 'Geographic mobility' are positive and significant (at the 5% threshold) for several periods, notably in 1995 and 2020.

These results are reinforced by the significance and negative sign of the coefficients associated with downgrading. These results suggest that access to the Luxembourg labor market constitutes an opportunity for social advancement for these workers. This

trend is reflected in the mobility tables of our study and the observations of Belkacem (2020), which showed that cross-border migration can broaden opportunities for social progression for individuals. On the other hand, the econometric results highlight an increased probability of upward social mobility for workers from fathers in intermediate professions. The coefficients of 'Social origin' of these categories show a positive effect on the probability of upward mobility, for all survey waves studied. This upward dynamic is also observed in the mobility tables.

The econometric results confirm the significant impact of geographic and sectoral variables on the probability of upward and downward social mobility. Residing in Lorraine significantly reduces the probability of social downgrading. This result highlights the importance of the structural constraints of the local economy on the social trajectory of workers.

Secondly, the positive and significant coefficients observed for upward mobility concur with the conclusions of Belkacem (2020). These outcomes indicate that the economic dynamics of border regions influence the socioprofessional trajectories of workers, and that the economic development of a neighboring country can create upward mobility opportunities for residents of adjacent regions.

The sector of activity plays a determining role : workers in the primary sector have a higher probability of upward mobility than those in the tertiary sector. This findings suggests that workers in the primary sector are directly impacted by economic transformations (Mendras, 1970). The results show that gender exerts a significant influence on the social trajectories of workers. In general, being a man increases the probabilities of upward social mobility throughout the period studied, with positive coefficients significant at the 1% threshold. The effect of gender on social downgrading is also significant over the entire period studied (except for 1977). A significant temporal trend emerges : the effect of gender on social advancement, although important and significant in the first decades, tends to decrease in recent periods (0.68 in 2020). However, the persistence of these effects indicates that structural inequalities linked to gender remain.

In conclusion, the econometric results corroborate the trends highlighted by the mobility tables. They also provide a precise estimate of the combined influence of social origin and cross-border mobility on workers' trajectories of downgrading and upward

mobility. These estimates provide additional insight into the trends identified above, confirming that cross-border mobility is a crucial lever for workers from modest backgrounds, while the structural constraints of the labor market in Lorraine hinder opportunities for upward mobility and increase the risk of social reproduction. Our results confirm the idea that a geographic move leads to a social move (Kaufmann et al., 2004). These moves can be horizontal or vertical, depending on the socioeconomic dynamics at work.

TABLE 2 : Probability of workers' social trajectory

	1965		1977		1985		1995		2005		2015		2020	
Variables	Asc	Down	Asc	Down	Asc	Down	Asc	Down	Asc	Down	Asc	Down	Asc	Down
Soc. Or. (=1)	2.51†	13.60†	8.56†	-33.51†	-1.52†	-15.29†	20.21†	-101.05†	-17.97†	-24.13†	1.38	-19.47†	-1.42	-19.64†
	(0.59)	(2.19)	(1.14)	(0.68)	(0.58)	(0.83)	(1.31)	(0.06)	(0.96)	(1.35)	(0.87)	(1.37)	(0.83)	(1.40)
Soc. Or. (=2)	11.63†	9.43	15.71†	-15.64†	10.32†	-6.26†	24.66†	-8.89†	22.24†	9.89†	11.59†	-7.09	9.24†	12.05†
	(0.23)	(1.06)	(0.65)	(0.35)	(0.33)	(0.43)	(0.85)	(0.07)	(0.76)	(0.85)	(0.39)	(0.80)	(0.42)	(0.73)
Lorrain	0.26	-0.33†	1.38†	-1.12†	0.37	-0.20†	2.00†	-1.29†	0.79†	-1.02†	1.12†	-0.73†	1.35†	-0.36†
	(0.29)	(0.09)	(0.27)	(0.08)	(0.26)	(0.09)	(0.37)	(0.08)	(0.28)	(0.17)	(0.34)	(0.13)	(0.41)	(0.14)
Geo. Mob.	1.82	-0.81	-0.18	3.27†	0.39	-0.58	2.12†	-1.25†	-19.88†	0.84	1.34	-0.28	3.45†	-1.30†
	(0.74)	(0.55)	(0.97)	(0.16)	(1.17)	(0.48)	(0.65)	(0.08)	(0.63)	(0.47)	(0.72)	(0.40)	(0.78)	(0.50)
Gender	1.21†	-0.48†	1.63†	-0.01	3.47†	-0.93†	0.54†	2.08†	0.46†	-0.18†	0.89†	-0.66†	0.68†	-0.40†
	(0.11)	(0.46)	(0.10)	(0.04)	(0.08)	(0.04)	(0.13)	(0.08)	(0.12)	(0.06)	(0.10)	(0.05)	(0.11)	(0.06)
Act. Sect. (=1)	1.44†	1.08†	-1.00†	0.35†	3.47†	-2.52†	8.32†	-6.59†	1.48	-3.58†	4.72†	-2.35†	3.11†	-2.76†
	(0.59)	(0.23)	(0.51)	(0.12)	(0.64)	(0.23)	(1.02)	(0.08)	(0.87)	(0.49)	(0.69)	(0.29)	(0.71)	(0.39)
Act. Sect. (=2)	-0.64†	-0.12	3.86†	-3.39†	1.15†	-1.22†	2.62†	-2.99†	0.13	-1.28†	0.84†	-0.76†	0.27	-0.57†
	(0.16)	(0.07)	(0.22)	(0.05)	(0.12)	(0.05)	(0.21)	(0.08)	(0.16)	(0.09)	(0.17)	(0.01)	(0.16)	(0.08)
$\hat{\mu}$	7.86†	-7.98†	14.52†	-16.21†	8.98†	-7.66†	22.46†	-50.00†	1.36†	-11.32†	10.37†	-10.99†	9.32†	-10.68†
	(0.29)	(0.99)	(0.60)	(0.31)	(0.28)	(0.39)	(0.79)	(0.08)	(0.43)	(0.63)	(0.33)	(0.64)	(0.38)	(0.69)
Intercept	-25.26†	-0.13	-41.18†	37.62†	-27.12†	17.38†	-63.96†	109.89†	-4.63†	26.99†	-30.61†	21.70†	-26.15†	2.13†
	(0.33)	(0.10)	(1.68)	(0.75)	(0.83)	(0.89)	(2.27)	(0.06)	(1.15)	(1.50)	(1.01)	(1.47)	(0.44)	(0.15)
Pseudo R^2	0.354		0.502		0.418		0.879		0.447		0.506		0.489	
Log pseudo-likelihood	-7 566.25		-10 128.97		-9 431.84		-4 596.91		-3 926.41		-5 203.52		-3 546.34	
Prob $> \chi^2$	0.00		0.00		0.00		0.00		0.00		0.00		0.00	
Obs.	14 125		22 325		17 311		42 129		7 317		10 729		6 987	

Note : Authors' calculations. Significance levels : † $p < 0.05$. This table presents the estimates of model 2 for each survey wave. The standard errors in parentheses are robust to heteroscedasticity and were corrected by bootstrapping (1000 repetitions). A variance inflation factor (VIF) test was used to check for multicollinearity in the data, with no problems identified for each year.

By incorporating social relations into the analysis of economic restructuring processes, our results identify the socioeconomic consequences of regional economic transformations (Marsden, 1992). By studying the social trajectories of cross-border workers, this work complements the existing literature on the explanation and understanding of cross-border migrations (Nonnenmacher, 2022).

5 Conclusion

Recent economic developments, marked by deindustrialization and financial globalization, pose significant obstacles to the social mobility of employees (Chauvel, 2006; Goldthorpe, 2007). These developments, widely documented in the literature, result in an intensification of social reproduction dynamics and an increase in the risks of downgrading (Askenazy, 2004; Piketty and Saez, 2014).

In this context, cross-border migration represents a potentially advantageous alternative for individuals. In this article, the empirical study confirms this postulate. We observe an increase in the likelihood of observing a situation of social advancement for cross-border workers, compared to non-cross-border workers. These results are part of a dynamic where migration promotes upward social mobility, otherwise inaccessible in their region of origin.

However, these opportunities for upward mobility are not uniformly distributed across the social hierarchy. While the descendants of blue-collar workers benefit greatly from these dynamics, the results also show an increased fragility of the upper and intermediate categories, where the structural limits of the labor market reinforce the risks of downgrading. This result underlines the importance of local and regional specificities in the analysis of social trajectories.

By extension, the study highlights tensions exacerbated by cross-border work. While the Luxembourg labor market offers significant opportunities for Lorraine workers, it also exacerbates the economic and social disparities between the two territories (Belkacem, 2015).

By establishing the connections between geographic and social mobility, we provide an empirical analysis highlighting the complexity of these relationships, which cannot be reduced to the establishment of a positive correlation (Blum et al., 1985; Fielding, 1990). It also enriches the debates on the effects of economic transitions in post-industrial regions. The results of this study, although focused on the Lorraine-Luxembourg case, find echoes in other international contexts, where geographic mobility appears as a response to economic and social disparities. In India, for example, internal flows from rural areas to urban hubs such as Mumbai illustrate how migration acts as an adjustment

mechanism in the face of structural inequalities (Benbabaali, 2013; Michiels and Reys, 2021). Similarly, hyper-financialized regions such as Dubai attract international migratory flows, composed of skilled and unskilled workers, in search of greater economic opportunities (Ewers, 2017).

However, these mobilities also exacerbate social tensions and inequalities, in the territories of origin, the host areas and their peripheries. These dynamics, observed in various contexts, highlight a common characteristic of global financial centers such as Luxembourg or London : while attracting a diverse workforce and generating economic opportunities, these poles often amplify regional disparities and socioeconomic inequalities (Sassen, 2001). On the one hand, they concentrate wealth and infrastructure, reinforcing their attractiveness. On the other hand, this concentration aggravates territorial discontinuities, leaving peripheral areas in trajectories of stagnation or marginalization.

These findings highlight the ambivalence of financialization : a driver of opportunities for social advancement for some, but also an amplifier of territorial inequalities. They call for more inclusive public policies, capable of reducing these discontinuities and equitably integrating territories into global economic dynamics.

Certain limitations must, however, be noted. The data used, although exhaustive, do not allow us to capture all of the determinants linked to mobility choices. In addition, the econometric analysis could be supplemented by qualitative approaches to explore the mechanisms underlying the observed dynamics. In fact, the social mobility of workers is the result of an intersection between geographic mobility, regional trajectories and social origins of workers.

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