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International mobility of academics: Theory and evidence

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International Mobility of Academics: Theory and Evidence*

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Abstract

The labour force in the university sector of many countries is extremely international. I propose a theoretical model to study cross border academic mobility, where academics bargain with institutions over pay and choose the countries where they live and work to maximise their lifetime utility. I then test the model on a sample of well over 900,000 research active academics over 33 years. The model predicts how academics respond both to changes in external conditions, including exchange rate fluctuations, and to changes in their record, measured by their publications and their citations. The theoretical predictions are confirmed by the empirical analysis.

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Keywords: Academic migration, university, international academic mobility, research, higher education.

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1 Introduction

Migration is a pervasive feature of academic careers: many professors hold positions across multiple countries throughout their professional lives, while university departments employ many faculty born and educated in very wide ranges of countries.[1] Among academic disciplines, economics stands out for its high level of international mobility, yet rigorous economic analyses of the factors driving academics migration are surprisingly scarce.

Academic migratory flows are determined by researchers' reactions to external events that alter their incentives to relocate. Understanding the dynamics generated by these responses is essential for identifying effective strategies to attract and retain academic talent in a global market, which in turn is of crucial importance for society, given the role of the university sector for the formation of human and technological capital. My aim in this paper is to lay a foundation for such an understanding.[2]

I begin by proposing a theoretical model founded on two key building blocks: (i) individual lifetime utility maximisation in a life-cycle model with retirement and (ii) Nash bargaining over pay and conditions. These two building blocks must be studied simultaneously, each having the outputs of the other as inputs. This interdependence exists because academics factor in their bargaining stance and in their location decisions both the future value of lifetime utility and the current value of outside offers: these are tightly linked by current and expected future currency exchange rates. This approach marks a significant departure from traditional migration models, where exchange rates

[1] See, among others, Yudkevich et al. (2016); Mihut et al. (2016); Teichler (2017) for recent surveys and descriptive analyses. For detailed examples, Yuret (2017) reports that approximately one third of professors at elite US universities obtained their undergraduate education in a different country. Official UK figures are similar for the entire sector (UK Higher Education Statistics Agency), but suggest an even higher percentage in the elite institutions, with several where UK nationals are less than half: see Table A1 in the online appendix. By way of comparison, out of a total of about 4100 footballers who have played at least one Premier League game from the 1992-93 season to 2020-21, 2,381 were foreign, from 113 countries.

[2] Related literatures, such as the relatively substantial body of work on students' international flows (King and Raghuram, 2013; Geddie, 2015), country specific case studies (Mendoza et al., 2020; Kurek-Ochmańska and Luczaj, 2021), or the sociological literature, often based on small sample interviews (Tremblay, 2005; Kim, 2009; Ortiga et al., 2020; Teichler, 2015) or unfamiliar categories (Bauder et al., 2018; Koh and Sin, 2020) do not hold useful lessons for an economic analysis of academics' migration.

are not normally included in analyses of determinants of migration, and when they are, they are usually found to be unimportant (Gibson and McKenzie, 2011). In the canonical migration model, what matters to workers is the standard of living in the country where they reside and work, regardless of the purchasing power their earnings might hold abroad. Consequently, exchange rate fluctuations typically have little to no impact on a workers utility. There are however exceptions. Workers who move to a different country to send remittances to family members at home are affected by exchange rate fluctuations, and are indeed shown to respond to them by adjusting their labour supply (Yang, 2008; Nekoei, 2013), and their migration choices (Gröger, 2021, or, for specific country cases, Yang 2006 for the Philippines, and Kırdar 2009 for Germany). Remittances are not a major concern for academics, but the future purchasing power of their accumulated savings is likely to be a consideration for their location decisions. Someone planning to retire in a city with beautiful scenery and affordable Michelin-starred restaurants may well choose to spend their most productive years in a foggy and grey metropolis to accumulate enough wealth, as pension and residential estate, which will support a genuinely affluent lifestyle, when converted in the currency of their preferred retirement country. Accordingly, in the theoretical model in Section 2, I include the exchange rate among the determinants of academics' location decisions.

The theoretical analysis in Section 2 also highlights the role of the interaction between the exchange rate and an academic's eminence on their propensity to emigrate. It shows that more eminent academics are more likely to emigrate, and that academics are more likely to move to a country if the country's currency loses purchasing power relative to that of their current country. However, this effect is weaker and may even reverse for more eminent academics. Why this should be so is not immediately obvious: as explained in more detail in Section 2, it follows from the subtle trade-off between saving to enhance consumption in retirement, and making the most of the current bargaining power, which becomes irrelevant after retirement.

I take the model to a dataset containing the publications in journals in the fields of economics, management, and decision theory listed in the Scopus proprietary catalogue published from 1990 to 2022. This dataset covers nearly 3 million academics, recording the year they published at least one paper and their institutional affiliations at that time. Approximately one third of the academics appear at least twice: for these a move can be defined as a change of affiliation between consecutive appearances, and a migratory move as one between countries. I estimate migratory flows and the probability of moves as a function of time-varying country specific macroeconomic variables (GDP, quality of life proxies, cost of living, and exchange rates), "academic" variables (research culture, nature of the institutional environment), and of time-varying individual characteristics, such as age, publications, and citations.

The empirical analysis follows the theoretical model by focusing on the exchange rate, a variable that is clearly exogenous to academics migration decisions. I first apply, in Section 4, the standard macroeconomic analysis of migratory flows. The results summarised in Table 2 are plausible, but, because of their reliance on aggregate flows, cannot capture individual differences which Section 2 shows to matter. To address this limitation, I turn to individual-level panel regressions in Section 5, incorporating idiosyncratic characteristics to capture personal factors influencing migration decisions. I find that the migration patterns observed align well the theoretical model of Section 2: a reduction in value in the currency of a country attracts academics, and this effect is weaker or reversed for more eminent academics. I also find intriguing differences in behaviour between women and men: these must be considered preliminary and in need of further investigation, as my use of given names to identify gender is incomplete and likely imprecise. In the remainder of Section 5, I confirm the robustness of the results to changes in the econometric specification and variable definitions. I also restrict the sample, to explore heterogeneity by examining differences among subgroups of academics defined by some characteristics, such as having moved or emigrated at least once, or having been affiliated at least once to

one institution located in specific countries, or with certain characteristics, such as the top US universities, and the UK Russell Group.

This paper contributes to the growing literature on the migration patterns of highly skilled individuals, such as entrepreneurs and inventors (Kerr et al., 2016, 2017; Beine et al., 2001; Docquier and Rapoport, 2012; Prato, 2025). These individuals share several characteristics with academics, including low relocation costs, highly transferable international skills, and operating in very thin markets. Agglomeration economies play a crucial role for entrepreneurs and inventors, as the global clustering of activities in places like Silicon Valley, Wall Street, and even Hollywood suggest. In academia however, while externalities obviously do exist, they typically operate at the much smaller scale of the department, witness the total absence of incentives to merge geographically close universities, and the lack of any pressure for academic institutions and for countries to specialise by discipline. Consequently, these externalities have limited influence on the global distribution of academic talent.[3]

The paper is organised as follows. In Section 2, I present a Nash bargaining model of lifetime utility maximisation and Section 3 describes in detail the dataset and its construction. Sections 4 and 5 contain the empirical analysis of the determinants of academic migration: macroeconomic regressions in the former and individual panel regressions in Section 5. Section 6 is a brief conclusion.

2 Theoretical background

I study a model of the global academic market. There are many countries, and in each, the university sector is open and mobile, and academics can move freely across countries in pursuit of prestige and salary.

[3] A further public finance strand of analysis examines the role of tax incentives on highly paid workers, from star scientists to European soccer players (Kleven et al., 2013; Bosetti et al., 2015; Akcigit et al., 2016; Moretti and Wilson, 2017; Agrawal and Foremny, 2019; Kleven et al., 2020). Specific tax schemes may have large effects in the country which implements them (see, for example, Bassetto and Ippedico, 2023). However, they are not embedded into a general equilibrium framework of the global determinants of academics' migration flows.

2.1 Academics

Academics maximise a standard (since at least Yaari, 1964) lifetime utility function given by the sum of the present value of utility u in each future period, which in turn depends on the period's consumption, c. I impose the following convenient standard specification:

$$u(c) = \frac{c^{1-\rho}}{1-\rho}, \tag{1}$$

with $c \geq 0$ and $\rho \in (0,1)$. Academics differ in their preferences for living and working in given countries: some people love warm beer and drizzly winter days, others prefer long boozy lunches and hot nights. Formally, I assume that an academic's location preference are described by a vector $\left\{\xi_j\right\}_{j\in\mathscr{W}} \in \mathbb{R}_+^{|\mathscr{W}|}$, where $\mathscr{W}$ is the set of the world's countries and $|\mathscr{W}|$ its cardinality. If an academic lives in country $j \in \mathscr{W}$ in period t, her utility from consumption is multiplied by ξ_j. A higher ξ_j characterises someone who, other things equal, is more likely to prefer to work in country j. Invariance of $u(c)$ to monotonic transformations implies that I can normalise to 1 the academic's utility parameter for living in the current country, which I will refer to as the home country. $\left\{\xi_j\right\}_{j\in\mathscr{W}}$ is an exogenously given idiosyncratic vector: in particular, it is independent of the choices made by other academics. While not totally innocuous, this is nevertheless plausible in a world where academic co-operation is almost as easy with someone at the other side of the globe as with someone living nearby. This assumption would instead be untenable for football and cricket superstars, whose success and rewards depend crucially upon playing in the best leagues, those where many other superstars also play.[4]

An academic's life is divided in periods, indexed by $t = 0, T, T+1$. This notation identifies period 0 as the early career, training and the tenure track period, and I take everything that happens in period 0 as given in the analysis. Period T is the time the academic is employed by institutions as an established researcher. Within period T she may

[4]Since I study established academics, who are typically able to maintain personal research networks independently of the country they live in or the institution they are affiliated with, it is plausible to assume that they do not move to a given institution or country in order to increase their skill and hence their future earnings as junior ones (Baldi, 1995) and workers in other sectors (Dustmann and Görlach, 2016) do.

seek and receive job offers from other institutions: these opportunities arrive according to a stochastic process loosely described below, but not central to the analysis. Period $T+1$ denotes her retirement, when past savings are used for consumption and bequests, assumed to be additive for simplicity. I have assumed the vector $\left\{\xi_j\right\}_{j\in\mathscr{W}}$ to be time invariant. For many people it is in fact likely to differ in periods T and $T+1$: academics might be flexible about where they work, but prefer a specific given country for retirement. Incorporating this would clearly imply only formal changes, such as an added time index to $\left\{\xi_j\right\}$, but migration decisions would still be based on similar trade-offs.

2.2 Negotiation

I study the choices of an academic at the point in period T when she may negotiate a move with a potential new employer. I assume common knowledge regarding payoff relevant characteristics, the academic's preferences and ability, and the employer's willingness to pay. This assumption is considerably less far-fetched than it would be for junior or tenure track hires, and also in other high skill sectors, in view both of the publicity of academics' record, and also of the possibility to "try out" a potential hire with short-term sabbaticals or other visiting arrangements prior to committing to a job offer.[5] Both the academic and the institution understand, anticipate, and factor in the academic's future choices.

The salary is determined as the outcome of Nash bargaining.[6] and therefore it is the value which maximises the product[7] between the academic's lifetime utility and the addi-

[5]Therefore the extensive literature on the on-the-job search, which hinges heavily on employers' asymmetric information (Waldman, 1984; Greenwald, 1986; Golan, 2005; Pinkston, 2009; Eeckhout, 2018; Docquier and Iftikhar, 2019), is not relevant in this set-up. Similarly for outside job offers. Their role in academia has anyway received scant attention, with the important exception of Blackaby et al. (2005). But even this paper, which focuses on the effect of exogenous rates of the arrival of outside offers on the pay level and promotion chances of different groups of academics, is only tangential to the present analysis, as any different responsiveness to outside offers or different arrival rates for different groups will be captured by the individual fixed effect of my panel regressions.

[6]The assumption of symmetric information implies that an academic can correctly anticipate the outcome, in terms of employment and pay, of any negotiation she would engage in with outside employers, as well as the response her current employer would make. Thus an academic would consider a job opportunity only when she knows it will lead to a move: there is no point in strategically seeking a job offer in order to obtain a better offer from another employer, either her current one or a third one altogether.

[7]Utility functions are invariant to monotonic transformations, and so it is reasonable to normalise the disagreement points to 0, even though in the presence of uncertainty it does entail some loss of generality,

tional payoff which the university derives from employing her. The latter is given by

$$\left(\frac{\lambda}{\Lambda} - f\left(y_T\right)\right). \tag{2}$$

In (2), λ is a measure of the academic's eminence, Λ is a measure of the university prestige, and $f\left(y_T\right)$ is an increasing function of the salary agreed in the negotiation. Both λ and Λ are time-varying. While λ is fixed when negotiation takes place, its evolution over time can be thought of as a Markov process, with uncertain events, such as publications in top journals or the award of prizes, affecting its current value. For the purpose of this paper, it is unnecessary to develop this aspect of the model. If Λ is an increasing function of the λs of the institution's academics, then (2) is a shorthand capturing the stylised facts that the (monetary evaluation of the) prestige gained by a university for employing an academic increases with the academic's eminence, and employing an academic of a given eminence is more valuable for a less prestigious university. This is not incompatible with the casual observation that more prestigious universities often pay more, given that, in equilibrium, they will also employ more eminent academics. It can also be reconciled with the observation that some academics are willing to sacrifice higher salary in order to work in a prestigious institution: either by adding to the utility function a further parameter which measures the subjective satisfaction of being a scholar at a highly regarded institution, or by including an academic's employment history among the determinants of the current value of her λ.

When, at a given moment in period T, negotiation takes place, the academic maximises utility in her future life. This is the weighted sum of the expected utility in the remaining part of period T and in period $T+1$. Their relative importance is measured by weights 1 and $\theta > 0$, respectively, and determined by the academic's age and her discount rate. The parameter θ captures these variables: a young academic with plenty of time left in period T will be characterised by a lower value of θ than someone older, hence with little time

as expected utility is only invariant to affine transformations. Note that this imply that the Nash solution of the bargaining game is the same as the Kalai and Smorodinsky's (1975) solution.

left in period T, for whom therefore utility in retirement, period $T+1$, weights more heavily in lifetime utility. For a given age, a higher discount rate decreases an academic's θ. Expectations are taken over the probability of further career moves later in period T, the future paths of λ and Λ, and other variables such as exchange rates, cost of living and other country specific shocks in the remainder of period T and in period $T+1$.

2.3 The equilibrium

To lighten notation, I drop the country subscript j and concentrate on one foreign country only: one can think of an academic being approached by institutions in several countries and considering only the one where, should an offer be accepted, she would have the highest lifetime utility, given the expected pattern of future offers. When the salary negotiation takes place, both parties take as given the academic's record, measured by λ, the university prestige, Λ, the academic's preference parameters for living in country j relative to the current country, ξ, the relative weights of working life left and retirement, θ, the rate at which marginal utility of consumption declines, ρ, and the value of the academic's current savings, W_T. The value of this last variable is endogenously determined as part of the dynamic lifetime utility maximisation by the academic, who, in each period, decide how much of their income they consume and how much they add to their accumulated wealth.[8] However, at the moment negotiation takes place, it is fixed and hence taken as exogenously given by both parties.

Both parties, when negotiating the salary, factor in the academic's future choices regarding the allocation of any proposed salary between savings and consumption, including the fact that its value will affect the retirement location that the academic will choose in period $T+1$. Hence, to determine the negotiated salary, one needs to work backward, namely determine first this retirement location. This depends on both the current and the expected future exchange rates, η_T and η_{T+1}, even though they are not

[8]For most academics most of it is held in the illiquid forms of residential real estate and of pension, both employer provided and state mandatory social security. For an analysis of demographic trends for the latter in an international perspective, see Ehrlich and Kim (2007).

normally included among the determinants of labour supply. The reason is that the current exchange rate affects the purchasing power of income saved whenever the currency in which income is paid differ from the currency in which consumption goods will be purchased, the cost of which depends on the expected exchange rate.

The unit of each currency is normalised so that a given unit of consumption has a cost of 1. The exchange rate is defined with reference to the academic's current home country, as *the number of units of the foreign currency needed to buy a unit of currency of the home country*. Thus for example, *an increase in the euro exchange rate* with the pound implies a *reduction in the value of the euro*, as one pound can now purchase more units of consumption in a country using the euro. To sum up, the academic will maximise the sum of the utility in period T and in period $T+1$, the latter weighted by θ. The first step is thus the determination of the country of residence in retirement period $T+1$. This happens at the start of period $T+1$ when the academic is unaffected by any employment variable.

Proposition 1. *Academic of type ξ chooses to live in the home country in her retirement period $T+1$ if and only if*

$$\xi \leq \eta_{T+1}^{\rho-1}. \tag{3}$$

For the sake of definiteness, I posit that, if indifferent, academics locate in their home country. The proof of all the results is tedious algebraic manipulation, and relegated to the online appendix.

To understand the intuition behind Proposition 1, begin by noting that, at the moment the retirement location decision is taken, the home currency value of the academic's wealth is fixed. The amount of consumption goods in can buy depends on the exchange rate of the country where it is consumed, that is, where the academic chooses to retire. Next recall that a higher value of η_{T+1} implies a devaluation of the foreign currency, that is the foreign currency is cheaper. If the period $T+1$ exchange rate increases, the academic's pension pot buys more units of the foreign currency, and hence more units of consumption abroad,

making retirement there more attractive, as the given pension pot allows more and better quality housing restaurant meals and opera tickets abroad than prior to the exchange rate increase. Note that the period $T+1$ location decision is independent of wealth: this is not general, but a "knife-edge" convenient consequence of the functional form of utility function (1).

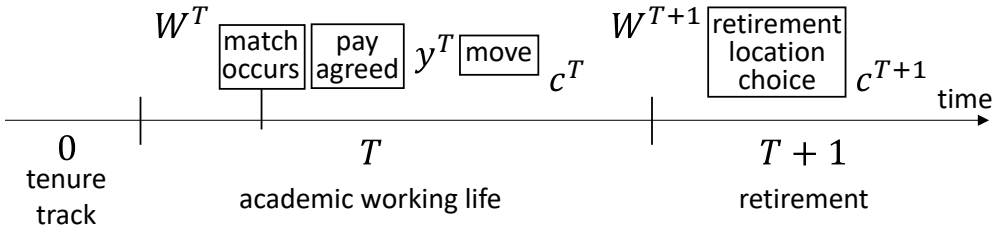
I determine next the allocation of the sum of the negotiated salary and the accumulated wealth, $y_T + W_T$, whose value at this point is given, between period T consumption, c_T, and savings, which determines next period wealth, W_{T+1}. Denote by $\mathscr{L}_t \in \{\text{home}, \text{abroad}\}$ the country where she lives and work in period t,

Proposition 2. *Consider an academic whose wealth has value W_T in the home country currency, and who has negotiated a salary y_T for period T. Her utility maximising choice of period T consumption satisfies:*

$$c_T = \begin{cases} \frac{\theta^{-\frac{1}{\rho}}}{\theta^{-\frac{1}{\rho}}+1}\left(W_T + y_T\right) & \text{if } \mathscr{L}_T = \text{home and } \mathscr{L}_{T+1} = \text{home}, \\ \frac{\theta^{-\frac{1}{\rho}}}{\theta^{-\frac{1}{\rho}}+\xi^{-\frac{1}{\rho}}\eta_T^{-\frac{1-\rho}{\rho}}}\left(W_T\eta_T + y_T\right) & \text{if } \mathscr{L}_T = \text{abroad and } \mathscr{L}_{T+1} = \text{home}, \\ \frac{\theta^{-\frac{1}{\rho}}}{\theta^{-\frac{1}{\rho}}+\xi^{\frac{1}{\rho}}\eta_T^{\frac{1-\rho}{\rho}}}\left(W_T + y_T\right) & \text{if } \mathscr{L}_T = \text{home and } \mathscr{L}_{T+1} = \text{abroad}, \\ \frac{\theta^{-\frac{1}{\rho}}}{\theta^{-\frac{1}{\rho}}+1}\left(W_T\eta_T + y_T\right) & \text{if } \mathscr{L}_T = \text{abroad and } \mathscr{L}_{T+1} = \text{abroad}. \end{cases} \tag{4}$$

According to (4), the lifetime wealth, given by the sum of the accumulated wealth converted in the currency of the current country and the negotiated salary y_T, is shared between periods T and $T+1$ according to their relative importance, θ. When the academic lives in different countries in the two periods, her preference for living abroad, ξ, and the current exchange rate, η_T, also affect how consumption is shared between the periods. Figure 1 illustrates the time line of an academic who is matched at some time during her professional life, period T, with an outside institution. Negotiations take place, and if they are successful, which they are in my rational expectations set-up, lead to a move, and a new

Figure 1: Timeline of an academics career.



Note: The academic's life is divided in three periods. Period 0 is the training and tenure track. During period T, a match may occur, followed by negotiations at the end of which pay y^T is agreed. A move to the new institution follows. The sum of the pay and the initial wealth W^T is either consumed in period T, c^T, or saved as the retirement wealth W^{T+1}. This is consumed in period $T+1$, the academic's retirement (or bequeathed). At each decision stage, academics and institution correctly anticipate future values of the relevant variables.

pay y^T. After retirement the academic chooses where to spend her accumulated wealth W^{T+1}.

I can now present the main result of this section. This is the determination of the country of residence in the remaining part of period T, which depends on the negotiated value of the salary for period T. To obtain explicit solutions, I specify the function f in (2) as the identity: $f(x) = x$. It is convenient to state it by summarising the three variables λ, Λ, and W_T, which are exogenously given at the time negotiation takes place, into a single one. Thus I define β, the relative bargaining power of the academic vis-à-vis the university, as

$$\beta = \frac{\lambda/\Lambda}{W_T}. \tag{5}$$

Proposition 3. *An academic with accumulated wealth W_T and with ability λ, will prefer to be employed in the home country in period T if*

$$\xi \leq \xi_H \equiv \left(\left(1+\theta^{\frac{1}{\rho}}\right) \left(\frac{1+\beta}{\eta_T+\beta}\right)^{\frac{1-\rho}{\rho}} - \theta^{\frac{1}{\rho}} \eta_T^{-\frac{1-\rho}{\rho}} \right)^{\rho} \quad \text{if} \quad \eta_{T+1}^{\rho-1} \geq \xi, \tag{6}$$

$$\xi \leq \xi_A \equiv \left(\left(1+\theta^{\frac{1}{\rho}}\right) \left(\frac{\eta_T+\beta}{1+\beta}\right)^{\frac{1-\rho}{\rho}} - \theta^{\frac{1}{\rho}} \eta_T^{\frac{1-\rho}{\rho}} \right)^{-\rho} \quad \text{if} \quad \eta_{T+1}^{\rho-1} \leq \xi. \tag{7}$$

Proposition 3 determines the cut-off value of the preference for living abroad such that an academic lives abroad in period T if and only if her own ξ is greater than this cut-off.

While (6) and (7) can be interpreted directly, it is more illuminating to determine how small changes in the exogenous parameters affect the cut-off, and hence the incentive to emigrate. I do so in the following corollaries. I begin with the roles of the academic's eminence and her accumulated wealth.[9] Recall that ξ_H and ξ_A are the RHS of (6) and (7).

Corollary 1. *Let* $\eta_T \gtreqless 1$, *then* $\frac{\partial \xi_X}{\partial \beta} \gtreqless 0$ *and* $\frac{\partial \xi_X}{\partial \theta} \gtreqless 0$, $X = H, A$.

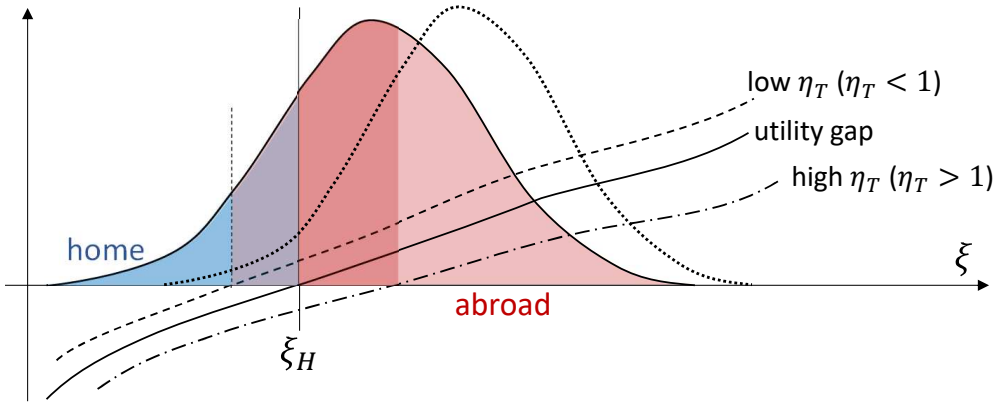
In words, the effect of 1. an increase in an academic's eminence, of 2. a decrease in the prestige of the university she negotiates with, and of 3. a decreases in her wealth and her age all decrease the chance of the academic emigrating when the exchange rate is high, and, vice versa, increase this chance when the exchange rate is low. The intuition as to why this is the case is that older academics, whose retirement age is nearer, and therefore have less scope to affect the size of their pension pot, are less keen to emigrate to a country where the exchange rate is higher because that will determine a reduction in the home value of the savings that can be added to the pot once consumption is paid for. By the same token an eminent academic can command a higher salary[10] in a negotiation with a foreign institution, but its value decreases as the exchange rate increases.

Figure 2 illustrates. In the diagram, the solid line is the "initial" utility gain from living abroad: the difference between the net present value of the lifetime utility for living abroad and at home in period T, for those who are at home in retirement (the case of ξ_A is similar). Thus academics with given β and θ and whose ξ exceeds (is less than) ξ_H live abroad (at home) in period T. Consider an academic with a higher β or a higher θ: when the exchange rate η_T is above 1, the new curve for this academic meets the horizontal axis

[9] There might be some academics who, like footballer George Best, "spend a lot of money on booze, birds, and fast cars, and squander the rest". But on average, both their high level of education and their comparatively moderate pay suggest (Ehrlich et al., 2008) that they tend to be capable "asset managers". As such, accumulated wealth is likely to be a substantial contributor to their lifetime utility.

[10] Note that when comparing salaries in different countries, academics will take into account the different rates of return which may be obtained for assets, both real and financial, which must be held in the country they reside, as well, of course of difference in taxes.

Figure 2: Comparative statics effects.



Note: In the initial situation the utility gap is the solid line: academics whose preference parameter ξ is to the right of intersection of this curve with the horizontal axis derive more utility if they live abroad in period T. An increase in β or θ shifts the utility gap schedule up for $\eta < 1$, implying that more academics want to live abroad, or down for $\eta > 1$, implying that more academics want to live at home in period T.

at a value greater than ξ_H, so the curve shifts down and to the right, for example to the dot-dash curve position. It shifts in the opposite direction, for example to the dash curve position, when the exchange rate η_T is less than 1.

The utility gap curve drawn in Figure 2 makes is easy to see the effects of changes in country specific characteristics, such as GDP and quality of life, can affect an academic's choice, and hence the migratory flows. I superimpose to these curves the density of ξ, as the solid curve filled in colour: academics in the red (blue) portion of the density prefer to live abroad (at home). Thus academics whose type is in the purple (darker red) area to the left (right) of ξ_H would choose to live abroad (live at home) following an increase in their bargaining power β or in their relative weight of the retirement period, θ. A decrease in the desirability of living in the home country shifts the density of academics to the dotted line position, implying that more academics want to live abroad.

Corollary 2. *Let* $\frac{1}{\eta_T} \gtreqless \frac{(1+\beta)^{1-\rho}\left(1+\theta^{-\frac{1}{\rho}}\right)^{\rho}-1}{\beta}$, *then* $\frac{\partial \xi_H}{\partial \eta_T} \gtreqless 0$. *Define* $\hat{\theta} = \frac{(1+\beta)^{\frac{1-\rho}{\rho}}}{\left(1+\theta^{-\frac{1}{\rho}}\right)}$. *Then*

$$\frac{\partial \xi_A}{\partial \eta_T} \gtreqless 0 \quad \textit{according to} \quad \left(\rho - \frac{1}{2}\right)\left(\frac{1}{\eta_T} - \frac{\hat{\theta}^{\frac{\rho}{1-2\rho}}-1}{\beta}\right) \gtreqless 0. \tag{8}$$

Corollary 2 is less clear-cut than Corollary 1, however, inspection suggests that when the exchange rate is low (which makes $\frac{1}{\eta_T}$ high), all those who will live at home in period $T+1$ will respond to an increase in the exchange rate by becoming more likely to emigrate in period T (the utility gap locus shifts down towards the dash-dot curve). The response of those who will be abroad in period $T+1$ depends on the concavity of their utility function. Those whose marginal utility does not decrease too sharply, that is those for whom ρ is high, behave in the same way as those who will be at home in period $T+1$, and vice versa. If these two groups cancel each other out, one would thus expect the aggregate response to be determined by those who will live at home in period $T+1$, and so, in aggregate, an increase in exchange rate causes an increase in emigration.

Note that $\hat{\theta}$ increases with β. Therefore more eminent academics are more likely to have a negative value for the second term in (8), suggesting that for those who will retire abroad, working at home in the last period would become more attractive in response to an increase in the exchange rate (the cut-off ξ_A becomes smaller). This argument might be strengthened by the observation that more eminent academics are also more likely to have a high ρ, ensuring the negative sign for (8).

The intuition for this is that when an academic negotiates with an institution in a country with a higher exchange rate, one, that is, where more units of the local currency can be purchased with one unit of her current country, she is in a stronger bargaining position than in a negotiation with an institution in her own country. This is so because the negotiated pay will be put to two utility enhancing uses: to purchase consumption in her country of work and to contribute savings to her "pension pot", her future consumption. The marginal utility of a unit of currency devoted to current consumption is independent of the exchange rate, given that consumption goods in the country of work will need to be paid for in that currency. But the marginal utility of adding a unit of a low value currency is lower, because (the academic would be in the position to argue that it) will purchase fewer units of future consumption.[11] This intuition also explain the finding that

[11] An imagined negotiation phase could go as follows: "Professor, this salary package will give you a very high standard of living in our country!", "That may be so, Vice-Chancellor, but it will also afford me only

the positive effect on the probability of migrating to a country with a high exchange rate is weakened by age. Older academics are likely to already have substantial pension pots, and the potential for a lavish lifestyle in the final years of professional life may well outweigh the smaller addition to the value in the chosen country of retirement of the academic's pension pot.

These corollaries can guide the empirical analysis, and I formalise the average effect that, in combination, they exert on academics' propensity to emigrate in a set of testable hypotheses, couched in terms of the predicted sign of the corresponding coefficient in a regression where the dependent variable is the observed propensity to emigrate.

Hypothesis 1. *1. Academics with more bargaining power are more likely to emigrate; the effect is weaker when the exchange rate is higher. Conversely:*

2. Academics are more likely to emigrate when the exchange rate is higher; the effect is weaker, and can possibly be reversed, for academics with more bargaining power.

3. Academics are more likely to emigrate to a country with higher quality of life.

In Section 4, I test empirically these theoretical predictions; before it, Section 3 describes the construction of the dataset used.

3 The data

The determinants of migratory flows are likely to differ considerably across disciplines. In some, such as the STEM subjects, academic moves are more influenced by availability of substantial funding, and research projects are more likely to require both the physical presence and to have a longer time scale that in more "essay based" disciplines. Conversely, subjects like law, literature, and history are often country or region specific, making it unusual for, say, a specialist in Scottish law to move to Italy, or for a Japanese medieval history scholar to hold a post in a Latin American university. For this reason, in

the smallest retirement bungalows and the lousiest golf courses in Florida: you need to offer me more!"

this paper I focus on the subset of the academics working in the disciplines of economics, business, management, statistics, and decision science.[12] These are research areas where both location specific expertise and availability of national funding are relatively less likely to constrain international mobility.

I use a large sample of papers published from January 1990 to September 2022 in journals included in the Scopus catalogue and classified as pertaining to the broad disciplinary areas I consider (details are in the online Appendix). For each of these publications, the Scopus database lists a unique identifier for all the authors who contributed to it, and all the institutions that an author lists as her/his affiliations: for example if the three authors of a given publication have each four affiliations, not necessarily all different, the database reports twelve author-affiliation pairs with the given publication's identifier. To each affiliation, the database associates one and only one country. The database also includes the total number of citations which a publication has collected up to 2022. Following some minimal cleaning[13] the dataset contains 8,772,035 entries, each identified by a triple (author, affiliation, publication), with nearly 3 million distinct publications. In over 85% of the observations, the author lists only one affiliation. For the remaining cases, I allocate to the author their first listed affiliation.

The dependent variable is a "move". This is constructed in two steps: firstly I determine the affiliation of an academic in every year in which they appear in the dataset, namely the year in which they have published a paper, and secondly, in the event of a difference between the affiliation in two consecutive appearances, the year in which a change in affiliation has occurred.

To begin with the first step I note first that only about 3% of academics have more

[12] Scopus classifies the 77m publications it lists in one or more of 27 main "Subject Area Classifications" (SAC, themselves grouped in Earth, Life, Health, and Social Sciences), and around 300 Scopus Subject Areas". See the appendix for more details. The dataset I use here contains all publications in two SACs, "Business, Management and Accounting" and "Economics, Econometrics and Finance", and those in the "Statistics, Probability and Uncertainty" Area in the SAC "Decision Sciences".

[13] For example, in a handful of cases no information about the country is included, and in another handful an author has no affiliation. These observations are dropped. The STATA code I used to clean elaborate and analyse the data is available in the online appendix.

than one publication in a given year. In these cases I assign the academic to the affiliation which the authors list as first in the most publications. If more than one institution has the highest number of affiliations listed by the academic in the year, then I look at the affiliations after the first and repeat the process.[14] If I still have ties, I choose randomly: this happens for just 298 observations. The final dataset is an unbalanced academic-year panel with 5,634,353 observations for 2,901,379 academics affiliated to 274,006 distinct institutions in 217 countries: of these academics 913,724 appear at least twice and can therefore be determined to have moved or not.

Next, the definition of a move. This is defined to have occurred if the affiliation in year t differs from the affiliation in the previous *observed* year. It matters for the empirical analysis in which year the move is considered to have occurred, as time-varying variables vary from year to year. This is unambiguous when the last observed year is $t-1$, which is the case in 44% of the moves. In the remaining cases, I take an intermediate year, with a bias towards year t, on the grounds that a move is more likely to have happened close to a publication.[15] Table A7 in the online appendix shows that changing the imputation of the year of the move leaves the results are essentially unchanged.

While in some cases determining the location of an academic from their publication record would be unsatisfactory, in this paper this is in fact the best way of doing so. To see why, note that, in my theoretical set-up, there is no conceptual difference between a British born academic who has spent her earlier career in the UK, and who is in the US in year t and her Dutch colleague who works in California in year t and has never set foot

[14] As an example suppose that in 2010 Professor Lapping lists four publications. He signs two as Gordon Lapping, University of Poppleton and Loamshire University, one as Loamshire University, UoHPK, and University of Poppleton, and the fourth as Loamshire University and UoHPK. Counting publications we see that both Poppleton and Loamshire are both listed as first in two papers in the year. A tie, so I need to count the institutions listed after the first, and compare the count of those tied: Loamshire has two and Poppleton one only, so for for 2010, Lapping is deemed to be affiliated to Loamshire University. Note that I divide all an author's affiliations into "first" and "the rest", with no ranking within the latter group.

[15] In detail, if g is function mapping the difference between observed years, I have assumed that the time-varying variable for the origin affiliation and country are those of the year $g(\tau)$, where $g(\tau) = t-1$ for $\tau \in [1,4)$, $g(\tau) = t-2$ for $\tau \in [4,7)$, $g(\tau) = t-3$ for $\tau \in [7,10)$, $g(\tau) = t-4$ for $\tau \in [10,15)$, $g(\tau) = t-5$ for $\tau \in [15,21)$, $g(\tau) = t-6$ for $\tau \in [21,31)$, and $g(\tau) = t-7$ for $\tau \geq 31$.

Table 1: Summary statistics for the academics in the sample

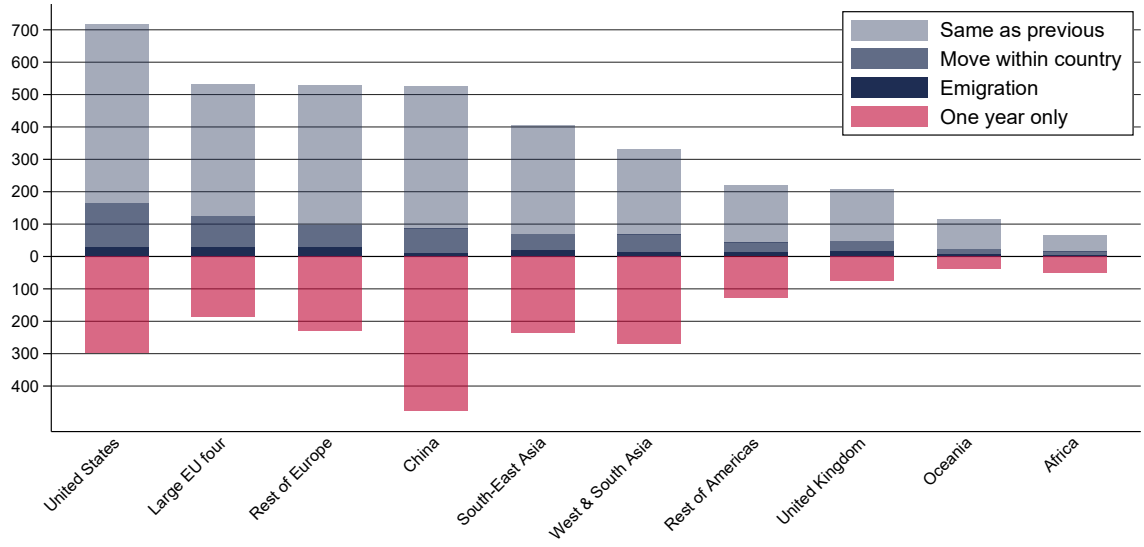
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
	Total	Twice or more	%twice (2)/(1)	Move	%move (4)/(2)	Emi-grate	%emigr (6)/(4)
United States	1,014,218	715,716	70.6	165,651	23.1	30,102	18.2
Canada	135,716	97,071	71.5	18,844	19.4	7,026	37.3
Rest of Americas	212,436	124,155	58.4	24,895	20.1	5,323	21.4
United Kingdom	281,867	207,591	73.6	47,398	22.8	15,632	33.0
France	173,600	130,267	75.0	52,437	40.3	8,361	15.9
Germany	239,539	163,517	68.3	34,640	21.2	10,098	29.2
Italy	160,251	125,368	78.2	21,803	17.4	5,629	25.8
Spain	144,083	110,954	77.0	16,675	15.0	4,163	25.0
Rest of Europe	757,833	528,141	69.7	98,268	18.6	28,209	28.7
Northern Africa	59,796	36,712	61.4	9,779	26.6	1,801	18.4
Sub-Saharan Africa	56,977	30,563	53.6	5,238	17.1	2,045	39.0
China	1,002,372	525,612	52.4	86,728	16.5	9,498	11.0
South-eastern Asia	203,854	115,043	56.4	21,104	18.3	7,093	33.6
Eastern Asia	438,366	290,087	66.2	47,767	16.5	11,547	24.2
Centr. and South. Asia	452,731	235,367	52.0	52,528	22.3	8,583	16.3
Western Asia	148,606	96,568	65.0	15,383	15.9	6,528	42.4
Australia	128,876	97,364	75.5	18,961	19.5	5,887	31.0
Rest of Oceania	23,264	16,943	72.8	3,139	18.5	1,561	49.7
Total	5,634,353	2,732,540	48.5	741,362	27.1	169,219	22.8

Note: The number reported are the academic-year pairs. The first column includes all academics, the second excludes academics who appear only once, and hence are dropped in the panel estimation of (15). If an academic publishes in n years, then she appears n times, and will appear in more rows if she has changed country. A move is defined as having a different institution relative to that of the previous appearance in the dataset. If in addition the institution is in a different country then it is included in the count of the last two columns. **Source**: My elaboration of Scopus data.

in Britain: both individuals are motivated by the same incentives to move to the UK in year $t+1$. By contrast, administrative datasets would not serve the purpose of identifying academics' migration, as at best they report the nationality or place of birth, but not the country of origin or destination of an academic who enters or leaves a country's dataset.

Related to this, there might be a concern that some academics will not appear in the dataset because they do not publish frequently enough, and of those who do appear, many included have publications in one year only in the period, and therefore are excluded from the empirical analysis. In fact, far from constituting a drawback, this is an appealing feature of the dataset I have constructed, as it ensures that the sample focuses on the

Figure 3: Geographical distribution of academics

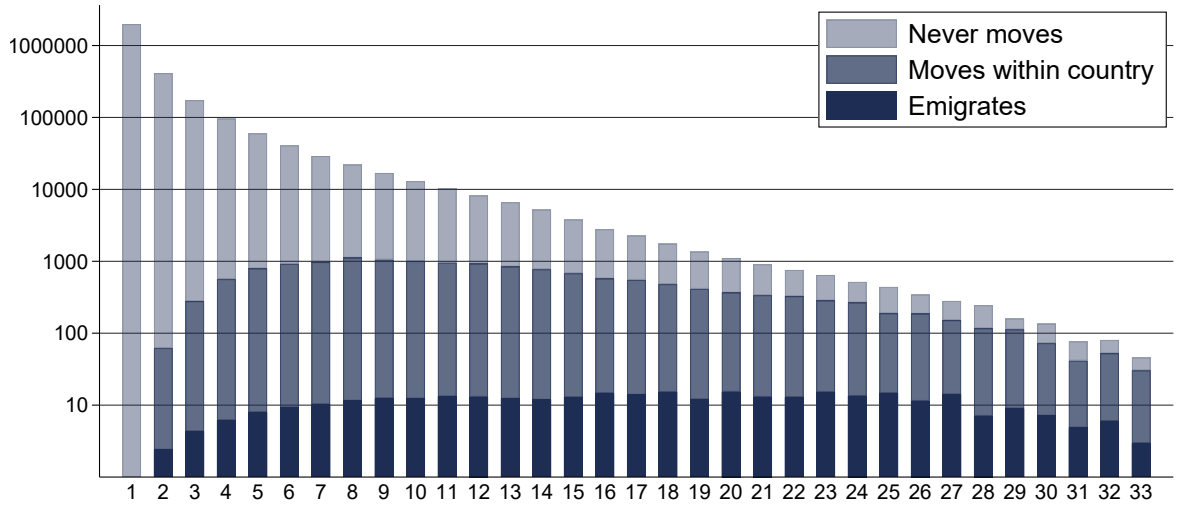


Note: The red portion of the bar counts, for each region, the number of academics (in thousand) who make only one appearance in the dataset. Above the horizontal axis, the lighter portion of the bar counts the academics who are always affiliated to the same institution, the darker portion those who move within the same country, and the darkest part those who change country (and hence institution) at least once.

academics whom institutions in different countries seek out to attract away from their current institution with the promise of better conditions. The idea of global competition for academic talent underpinning the model is that for an academic to come to the attention of a university across the globe, she must be visible, and a regular presence in outlets listed in Scopus does indeed creates more global visibility than other academic activities, however necessary and valuable they may be, such as scholarly work that does not lead to publications, excellent teaching, or a tireless contribution to administrative, managerial, and outreach activities in one's own institution. In brief, the academics who are more likely to be highly international mobile, and hence those whose location decisions are more likely to be affected by international variables and exchange rate fluctuations, are precisely those who appear frequently in the Scopus database.

Summary statistics information on the sample is collected in Table 1 and Figures 3 and 4. Figure 3 plots the number of each type of possible pairs of consecutive appearances of an academic: those in red appear only once, and therefore no move of theirs can be recorded, they are excluded from the subsequent analysis. Above the horizontal axis, the

Figure 4: Appearances, moves, and migration of academics in the dataset



Note: Number of academics according to the number of appearances in the dataset, and the proportion of these appearances which are all in the same institutions (the light part of the bar), in different institutions in the same country (the darker part of the bar), or in institutions in two or more countries (the darkest part of the bar). The underlying data to draw the graph is in Table A3 in the online appendix.

length of each portion of the bars is the number (of thousand) of pairs of observations for the same person according to whether they have the same affiliation as they had in the previous observation (that is the academic has not moved: lighter colour), in different affiliations (indicating a move within the country, darker colour), or in institutions located in different countries (the academic has emigrated, the darkest colour). Table 1 contains the same information, with a different, finer partition of the world: for the regions which are the same in Table 1 and in Figure 3, the first column is the height of the entire bar (both the red and the blue part).

Table 1 and Figure 3 distinguish the types of *moves*, whereas Figure 4 divides the *academics* according to their mobility: some never moves in (the observed part of) their career, some move but spend their whole working life within one country, and the rest are affiliated to institutions in at least two different countries. The vertical bars report in different shades the three types, in proportions of the total number who fall into each category. For each integer n, the overall height of the bar is the natural log of number of academics who appear in the data n times.

4 Empirical results. Preliminary: aggregate flows

Following Santos Silva and Tenreyro (2006), I adapt the international trade model (Thursby and Thursby, 1987) to the study of migration flows from two countries, the origin and the destination. I use here the following simple form of this model:

$$\phi_{od\tau} = \Gamma_m \mathbf{X}_{od\tau} + u_{od\tau}. \tag{9}$$

In (9), $\phi_{od\tau}$ is the migration flow from the origin to the destination country, denoted by subscripts o and d, and $\mathbf{X}_{od\tau}$ is a vector of time-varying origin-destination country pair specific variables. The error term contains year fixed effects, a time invariant component for the origin and the destination country-pair, which of course encompasses country fixed effects, and a normally distributed random error.

The vector $\mathbf{X}_{od\tau}$ contains three groups of variables. The first group are time-varying "non-academic" variables which affect the quality of living conditions in the origin and destination countries. Specifically, I include the GDP per capita, in log, denoted by $G_{o\tau}$ and $G_{d\tau}$, as a proxy for the standard of living, and, following the theoretical model in Section 2 which shows it to play an important role, the exchange rate between the origin and the destination country. This is computed as the ratio of exchange rate destination country relative to that of the origin country $\eta_{od\tau}$, both adjusted for differences in cost of living (Keita, 2016, p. 2939). Formally:

$$\eta_{od\tau} = e_{od\tau} \frac{P_{o\tau}}{P_{d\tau}}, \tag{10}$$

where $e_{od\tau}$ is the nominal exchange rate of the currency of country d at time τ, that is the number of units of the currency of country d purchased with one unit of the currency of country o, and $P_{i\tau}$ is the consumer price index in country i at time τ.[16] A

[16]The literature studying the determinants of individual migration decisions rarely includes the exchange rate. When it does, it is in view of its effects on wages (Mishra and Spilimbergo, 2011) and the labour supply

decision to move to a different country is unlikely to be taken on the basis of short term fluctuations of the exchange rate, so I have also smoothed the current exchange rate time series: this does not change the results. The regressions reported use a simple three period moving average, with double weight on the current year. This group also includes a quality of life index , $q_{o\tau}$ and $q_{d\tau}$, which I have constructed from a principal component analysis of three measures: (i) the corruption perception index, itself a composite measure where a low value denotes a corrupt country, (ii) the quality of the public administration, which may matter to foreign academics for activities such as buying or renting a house, paying taxes, organising schools and travels, and (iii) the degree of autonomy enjoyed by universities from interference from non-academic persons or agencies.[17] A country's quality of education is another plausible variables to be included among the determinants of academics' country preference vector $\left\{\xi_j\right\}_{j\in\mathscr{W}}$ and, through it, of their migration choices. Children's acquisition of human capital is included as an important component of a general equilibrium endogenous growth model with migration where individuals are altruistic (Ehrlich and Kim, 2015; Ehrlich and Pei, 2021). However, I do not include measures of countries' education quality. This is because it seems unlikely that academics contemplating a move to a new country would be influenced by information available in official statistics which average over the entire population, such as the secondary schools enrolment, since their children would probably be enrolled in "outlier" schools, be they private or located in neighbourhoods not representative of the country's average.[18]

of migrants, who may be more flexible in their hours and also need to remit a certain amount to their country of origin (Nekoei, 2013).

[17] Macroeconomic variables such as population, GDP, yearly exchange rates, and price indices, are obtained from `data.worldbank.org`. All exchange rates are normalised to the year 2010: this corresponds to defining the unit of consumption as one that cost one unit of the currency in 2010. For countries which changed currencies in the 1990-2022 period, including the eurozone countries, I have converted the exchange rate using the official rates or the rates in the two years before and after the conversion. As to the three components of the quality of life index, the corruption index is obtained from `transparency.org`, and the data for the other two measures from `v-dem.net`. Details of the measures can be found in the online Appendix C. As one would expect, the correlation between $G_{d\tau}$ and $q_{d\tau}$ is high, at 0.769. A complete table of summary statistics and pairwise correlations of the variables I used is available in Tables A4 and A5.

[18] Information on countries' teenagers ability to use reading, mathematics and science knowledge, such as collected in the OECD PISA programme would be preferable. However, its coverage is limited both in countries, effectively only OECD members, and in time, as surveys run every three-four years from 2000.

The general scientific environment of a country is likely to be an important consideration in academics' location preferences. I capture this with the second group of time-varying variables I include in the regressions, both as pairs for the origin and the destination country: $N_{o\tau}$ and $N_{d\tau}$, the number of academics, either in log or as a proportion of the overall population, to account for the importance of academia in the country, and $p_{o\tau}$ and $p_{d\tau}$, the "research prestige", computed as the first principal component of the number of publications authored by the country's academics and their cumulated past citations.

The final group of variables reflects the idiosyncratic characteristics of the origin country: I do so to attempt to capture a country's short-term specific events which affect an academic's life, such as changes in tenure rules or pay and conditions, or even specific fiscal measures directed at stemming or reversing the brain-drain. In the absence of direct measures, I include in this third group the average age of the academics who publish in the year, $a^A_{o\tau}$, the average age of those who move, $a^M_{o\tau}$, the average age of those who emigrates, $a^E_{o\tau}$, and the ratio between the number of academics who move abroad as a proportion of the total number of academics who move anywhere, $\nu_{o\tau}$ (a sort of "emigration rate"). I measure age as the number of years lapsed since the first appearance in the dataset: this clearly is a very rough measure, but is likely to be correlated with an academic's actual age.

The casual direction implied by (9) is for the academics migration flow to be determined by the aggregate variables in the vector $\mathbf{X}_{od\tau}$. This seems plausible for the macroeconomic variables in the first group, as the small size of academic migratory flows relative to the variable in the first subset of vector $\mathbf{X}_{od\tau}$ suggests reverse causality unlikely.[19]

The presence of omitted variables in the shape of exogenous shocks affecting both macroeconomic aggregates and academic migratory flows, is potentially more plausible.

[19] This exclusion restriction would be questionable in instances where academic migration was exogenously driven by events significant enough to impact macroeconomic conditions in the destination country. A notable example is the technological advancements in the US resulting from the forced migration of German chemists of Jewish descent caused by racial policies in Hitler's Germany (Moser et al., 2014).

In the period covered, there are relatively few such shocks, which moreover do not involve countries with many migrating academics.[20] In addition, the inclusion of year fixed effects, origin-destination pair fixed effects, and some academic variables in the vector $\mathbf{X}_{od\tau}$ should control for unobserved shocks occurring in specific years, or affecting specific pairs of countries.

To sum up, I estimate a panel regression of the following specification:

$$\begin{aligned}\phi_{od\tau} = &\mu_0\eta_{od} + \sum_{x=o,d}\left(\mu_{1x}G_{x\tau} + \mu_{2x}q_{x\tau} + \mu_{3x}p_{x\tau} + \mu_{4x}N_{x\tau}\right) + \sum_{X=A,M,E}\mu_{Xo}a^X_{o\tau} + \\ &\mu_\nu\nu_{o\tau} + \text{origin} \times \text{dest} + \tau + \varepsilon_{od\tau}, \qquad o,d \in \mathscr{W}, \quad \tau = 1990,\ldots,2022.\end{aligned} \tag{11}$$

In (11), $\mathscr{W}$ is the set of countries in the data, $\phi_{od\tau}$ is the gross migration flow from origin o and destination d country, η_{od} is the real exchange rate between the countries, (10), $G_{o\tau}$, $q_{o\tau}$, $p_{o\tau}$, $N_{o\tau}$ are the per capita GDP, the quality of life index, the academic prestige, and the number of academics in the origin country, with the corresponding measures for the d, the destination country. In addition, $a^X_{o\tau}$ is the average age of the academics, $X = A$, the academics who move, $X = M$, and those who emigrate $X = E$ in the origin country, and $\nu_{o\tau}$ is the percentage of moves where the destination is to a foreign country. I include country pair and year fixed effects and a standard error term clustered by country pair and year.

Table 2 reports my results. The first column includes only the exchange rate and year and country-pair fixed effects. To this, I add time-varying "non-academic" country variables (GDP and quality of life index) in Column (2). The main regression, Column (3), adds the academic variables. Column (4) follows Keita (2016) in using the Poisson pseudo-maximum likelihood estimator (PPML) developed by Santos Silva and Tenreyro (2006). Column (5) replaces the log of the exchange rate with its value, with little change in the coefficients of the other variables. The regression in the final column weights the

[20] An obvious one coming to mind is the Russian invasion of Ukraine, which however occurs at the very end of the period considered. Moreover, only 7185 academics in the dataset who have changed affiliation have ever been associated to a Ukrainian or a Russian institution. This is only 0.79% of the total.

Table 2: Migratory flows between pairs of countries

	No controls	Macro controls	Main	Non-linear (PPML)	Ex-rate (not log)	Origin pop weighted
VARIABLES	(1)	(2)	(3)	(4)	(5)	(6)
Real Exchange Rate	4.002*	-0.0166	0.0232	-0.00266	0.00844	1.622
	(2.193)	(2.457)	(2.007)	(0.0217)	(0.0290)	(1.979)
GDP per capita (origin)		9.534	-8.969*	-0.149***	-8.976**	-5.759
		(6.805)	(4.493)	(0.0200)	(4.227)	(4.798)
GDP per capita (dest.)		32.83***	16.13***	0.0871***	16.14***	5.852
		(6.150)	(4.880)	(0.0222)	(4.716)	(5.444)
Quality of life (origin)		17.24***	-0.840	-0.0164*	-0.841	-4.650**
		(3.857)	(2.632)	(0.00985)	(2.634)	(2.193)
Quality of life (dest.)		17.83***	3.182	0.0309***	3.183	1.009
		(2.647)	(2.042)	(0.0101)	(2.041)	(2.162)
Academic prestige (origin)			4.066***	0.0154***	4.065***	6.798***
			(0.759)	(0.00257)	(0.759)	(1.057)
Academic prestige (dest.)			2.222**	0.00234	2.221**	4.577***
			(0.825)	(0.00293)	(0.825)	(1.267)
N academics, log (origin)			49.79***	0.291***	49.79***	37.69***
			(2.922)	(0.0123)	(2.923)	(2.495)
N academics, log (dest.)			27.93***	0.157***	27.93***	12.89***
			(2.099)	(0.0145)	(2.096)	(1.629)
Emigration rate (origin)			73.57***	0.215***	73.57***	135.3***
			(7.613)	(0.0323)	(7.588)	(7.080)
Average age (origin)			5.292***	0.0191***	5.292***	5.079***
			(1.236)	(0.00391)	(1.234)	(1.233)
- of those who move			-0.236	0.00509	-0.236	-1.239
			(0.660)	(0.00414)	(0.660)	(0.899)
- of those who emigrate			-0.940**	-0.00972***	-0.940**	-0.811
			(0.459)	(0.00323)	(0.460)	(0.613)
Observations	36,133	35,952	35,606	31,533	35,606	35,606
R-squared	0.858	0.862	0.886	0.7247	0.886	0.767

Note: All column are log-log panel estimates, except (4), which uses the maximum likelihood PPML estimator (see Santos Silva and Tenreyro, 2006), and (5), which is log-linear. All specifications include year fixed effects and origin-destination pair fixed effects. Robust standard errors in parenthesis, clustered at the year (except (4)) and the origin-destination country pair. Exchange rate is given in (10). * , ** , *** denote significance at the 10, 5, and 1 percent level.

observations with the origin country population.[21] Except in Columns (4) and (5), the model is a standard log-log panel estimation, implying that the coefficients are the corresponding elasticities, expressed as a percent for readability: thus, for example in the preferred specification, Column (3), a 1% higher GDP in a country suggest an *emigration*

[21]Table A6 in the appendix presents some more specifications. For example taking the number of academics as a percentage of the total population rather than its log, and using the US dollar exchange rate rather than the pound sterling. There are no noticeable changes.

flow lower by 0.09%*, and an *immigration* flow higher by 0.161%***.

Coefficients are broadly consistent across specifications. The exchange rate appears to have limited aggregate effect on the migration flows. GDP per capita seems to have the expected sign: academics leave poorer country in favour of wealthier ones, whereas the quality of life index of a country does not appear to influence migratory flows. Academic prestige and size of both the origin and the destination countries also increase flows, which would be consistent with a narrative that countries with an active academic sector are those where institutions seeking to attract academics look for them, and by the same token those where academics themselves are more willing to move to. The change in the coefficients evidenced by the comparison between columns (2) and (3) in Table 2 suggests correlation between the macroeconomic variables and the new variables in column (3), those included above in the second and third subset of $\mathbf{X}_{od\tau}$. This is plausible and leaves unchanged the role of the exchange rates.

5 Individual level analysis

The previous section shows associations between aggregate flows and aggregate national variables. These have some descriptive interest, but the theoretical analysis presented in Section 2 does highlights that an academic's decision to emigrate depends crucially on both her own idiosyncratic preferences and her own eminence. Given that academics are not randomly distributed across countries at any given moment in time, differences in academics' unobservable individual characteristics ought to be disentangled. In this section, I therefore perform an individual level analysis of the migration decision. An additional advantage of this approach is that it allows me to separate the analysis in different samples, so as to identify any structural behavioural differences in academics with different backgrounds.

I build my individual level panel analysis from an equation such as:

$$m_{i\tau} = f\left(\mathbf{Z}_{i\tau}, \mathbf{X}_{od\tau}\right) + u_{iod\tau}, \tag{12}$$

where $m_{i\tau}$ takes value 1 if academic i has moved from one institution to a different one in period τ, and $\mathbf{X}_{od\tau}$ is a subset of the vector of origin and destination country variables included in (11). The new vector $\mathbf{Z}_{i\tau}$ includes controls affecting academic i in period τ. The error term $u_{iod\tau}$ has a rich structure, and I consider several specifications. As the next section shows the empirical results do not change noticeably as the specification is changed. The preferred one, used for all the robustness tests and separate samples, is the fullest:

$$u_{iod\tau} = i \times \text{origin} \times \text{dest} + \tau + \varepsilon_i. \tag{13}$$

In (13), I add a year fixed effect to the individual-origin-destination triple fixed effect, with an additional additive idiosyncratic error term. This rich structure captures specific individual preferences for given country pairs, to account for the possibility that idiosyncratic preferences for given country pairs may differ from individual to individual. Thus a given French academic, who may have family ties in France and in, say, Canada, will have a different individual FE for France-Germany and Canada-France, and in turn these country pair fixed effects will also differ from those of an academic from a different country who makes the same moves.

The theoretical conclusion derived in the model in Section 2 is that an academic chooses to move if the outcome of the negotiation with the employer is preferable to the current conditions. This outcome is in turn determined by her relative bargaining power vis-à-vis the university U she is negotiating with. In (5), I measure the non-observable bargaining power of academic i vis-à-vis university U with the ratio between her eminence, $\lambda_{i\tau}$, computed in Section 4 as a principal component analysis of academic i's number of publications in year τ and cumulated up to year τ and the citations collected by these publications.[22] , and the product between her wealth in year τ, $W_{i\tau}$, and the prestige of the institution she is negotiating with, $\Lambda_{U\tau}$. I have of course no information regarding wealth: wealth is likely positively correlated with age, which, as explained

[22]Excluding the citations obtained by the year τ publications leaves the measure essentially unaltered.

above is in turn likely correlated with the time interval from the first appearance in the dataset.[23] Thus I use as age as a proxy for wealth, which however ignores the fact that academic pay, and what a person can save in a year, differs widely across countries. To account for this, l have alternatively computed academic i's wealth in year t as the accumulated value obtained with an annual total saving of 10% of the GDP per capita of the country where the academic lives, and a rate rate of return of 2%. The idea being that an academic saves a sum equals to one tenth of the per capita GDP of her country of residence, and invests it at a rate of return of 2% per year. In Table 3 (Column (5)), I include the robustness test where the main regression is run using this measure of wealth to compute academic i's bargaining power in year t.

Finally, I measure $\Lambda_{U\tau}$ with the average eminence of the university's academics working there in year[24] τ: $\Lambda_{U\tau} = \sum_{i\in U} \lambda_{i\tau}/n_{U\tau}$, where $n_{U\tau}$ is the number of academics with at least one publication in institution U in year τ. All these variables are fixed at the time of the negotiation and hence cannot be influenced by the move itself. Next I assume, plausibly, that the institution where the academic is in her next appearance in the dataset, in year $\tau+1$, is indeed her preferred one: all other institutions are either less preferred, or not in her choice set, and hence can be disregarded for year τ. To sum up, following (5), I construct academic i's relative bargaining power vis-à-vis university U in year τ, $\beta_{i\tau}$, as (the log of) the ratio between academic i's eminence, $\lambda_{i\tau}$, and the product of her "age" in year τ, $a_{i\tau}$, and the average eminence of the university's academics working there, $\Lambda_{U\tau}$:

$$\beta_{i\tau} = \ln\lambda_{i\tau} - \ln a_{i\tau} - \ln\left(\frac{\sum_{i\in U}\lambda_{i\tau}}{n_{U\tau}}\right). \tag{14}$$

The "macroeconomic" variables in the vector $\mathbf{X}_{od\tau}$, which are constant across all aca-

[23] This proxy for age and the academic's eminence are positively correlated, as one would expect, but, at 0.394, the correlation is far from extreme.

[24] A question may arise the average should be taken in year τ or in year $\tau+1$. Negotiations take time, and there are also publication delays so that there is the argument for $\tau+1$ would have to hinge on both parties rational expectation on the future value of $\Lambda_{u\tau}$. In any case, running the regressions with $\Lambda_{u,\tau+1}$ leaves all quantitative results essentially unchanged.

demics who move between two given countries, are the same as in (9).

I argued in Section 4 that exogenous migration shocks in the period, such as those determining refugees flows, have likely been not involved more than a small number of publishing academics. Thus, in line with, for example, Moretti and Wilson's (2017) result that migration choices by top earning scientists are responsive to changes in personal and business tax differentials, the empirical analysis is built on the direction of causality from macroeconomic variables to individual academics' choices.. Academics who do not move, or who move within the country are of course also included, and the relevant macroeconomic variables change even when the country of origin is the same as the destination country, as they are measured in different years. One important implication of Corollary 1 is that the role of bargaining power varies according to the exchange rate. This suggests the inclusion of an interaction term between β and η_T, and so the chosen specification is

$$m_{i\tau} = \alpha_0 \beta_{i\tau} \times \eta_{od\tau} + \mathbf{B}_1 \mathbf{Z}_{i\tau} + \mathbf{B}_2 \mathbf{X}_{od\tau} + u_{iod\tau}. \tag{15}$$

Table 3 reports my empirical results.[25] Column (4) is the main regression, specification (15), with the error structure given in (13). I build towards it by altering the structure of the fixed effects in the first three columns: Column (1) posits $u_{iod\tau} = \text{origin} \times \text{dest} + \tau + \varepsilon_i$, in Column (2) I impose $u_{iod\tau} = i + \text{origin} \times \text{dest} + \tau + \varepsilon_i$, and in Column (3) $u_{iod\tau} = \text{origin} \times i + \text{dest} \times i + \text{origin} \times \text{dest} + \tau + \varepsilon_i$. The first four columns of Table 3 show that altering the structure of the fixed effects changes the estimated coefficients only slightly.

The exchange rate and the bargaining power, and their interaction, all have the sign predicted by Hypothesis 1, and are all statistically significant. In the presence of interaction terms, the interpretation of the values of the estimated coefficient is best conducted with the aid of a graphical analysis. To this aim, Figure 5 plots the marginal effect of each of bargaining power and exchange rate, keeping the other variable fixed at various levels.

[25] The regressions in this section are run using the high dimension fixed effect panel estimator in Correia (2017) in a linear probability specification.

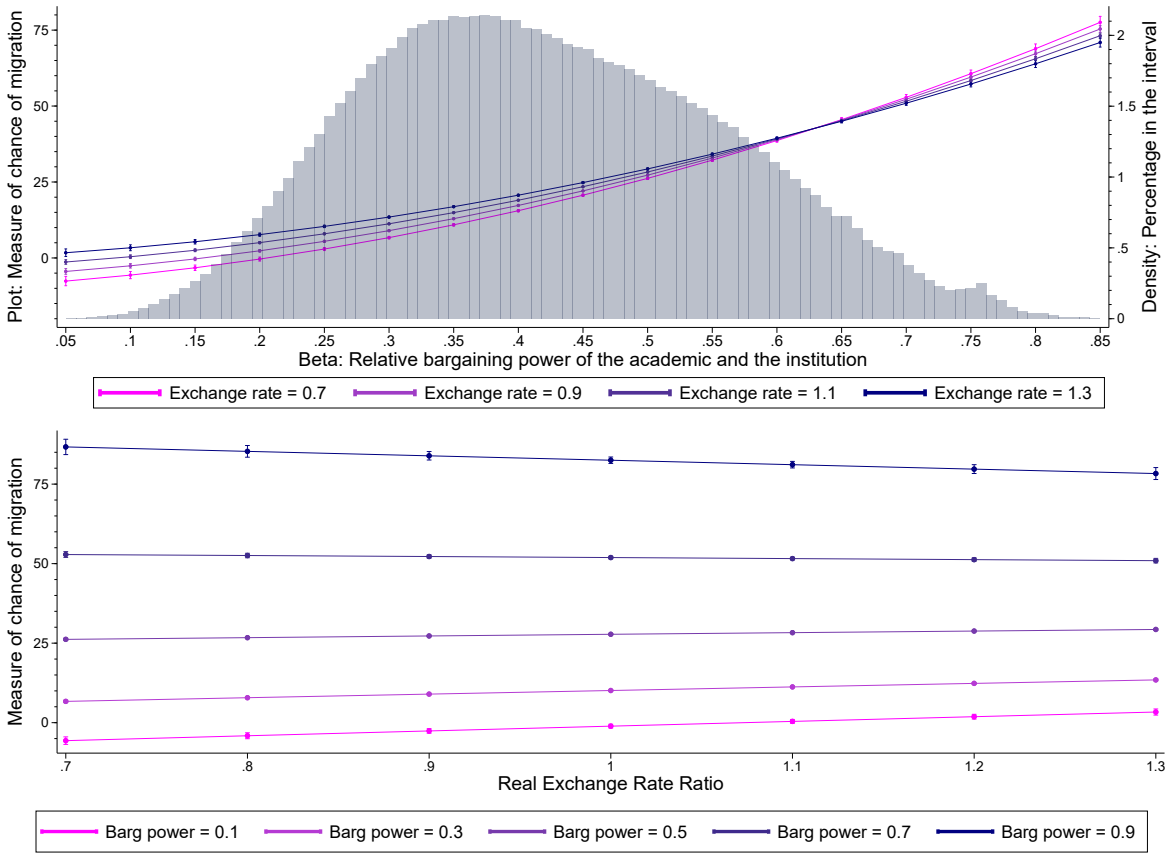
Table 3: Main Results: Individual level regression

	(1)	(2)	(3)	(4)	(5)	(6)	(7)
	or×dest+ year FE	or×dest× yr+ind	or×ind+ dest×ind	triple inter FE	wealth proxy	women	men
Real Exchange rate (log)	22.59***	28.99***	19.36***	19.54***	19.93***	24.40***	21.28***
	(0.783)	(1.633)	(1.077)	(1.091)	(1.063)	(3.227)	(1.750)
Relative BG power	9.979***	11.85***	12.66***	12.71***	15.96***	15.11***	13.81***
	(0.145)	(0.257)	(0.241)	(0.245)	(0.253)	(0.692)	(0.395)
Interaction BG power×XR	-3.286***	-1.922***	-3.095***	-3.122***	-3.299***	-4.166***	-3.388***
	(0.138)	(0.237)	(0.220)	(0.224)	(0.226)	(0.629)	(0.359)
GDP per capita ratio	13.07***	69.07***	16.97***	17.20***	11.51***	17.06***	14.93***
	(0.314)	(1.461)	(0.635)	(0.645)	(0.638)	(1.990)	(1.067)
Δ quality of life dest—origin	0.764***	-6.441***	1.374***	1.388***	1.694***	0.585	-0.462*
	(0.114)	(0.461)	(0.153)	(0.153)	(0.153)	(0.449)	(0.268)
Academics: dest/origin	-2.340***		-15.00***	-17.34***	-18.18***	-19.40***	-17.63***
	(0.121)		(0.631)	(0.697)	(0.725)	(2.722)	(1.236)
Δ country academic prestige	0.0379	-0.491***	1.364***	1.380***	1.618***	2.028***	1.189***
	(0.0334)	(0.131)	(0.0734)	(0.0751)	(0.0749)	(0.268)	(0.133)
Authors: 1st institution (log)	1.331***	2.880***	2.811***	2.818***	3.464***	3.678***	3.095***
	(0.0531)	(0.0568)	(0.0624)	(0.0626)	(0.0637)	(0.192)	(0.106)
Authors: 2st institution (log)	-1.830***	-1.331***	-1.842***	-1.855***	-1.625***	-1.930***	-1.182***
	(0.0731)	(0.0743)	(0.0831)	(0.0833)	(0.0834)	(0.258)	(0.141)
Propensity to emigrate, origin	-25.86***		-24.37***	-24.93***	-27.71***	-22.86***	-22.58***
	(0.557)		(0.726)	(0.731)	(0.736)	(2.092)	(1.161)
Average age, origin	-0.0588		-1.638***	-1.626***	-2.136***	-1.488***	-1.855***
	(0.0806)		(0.107)	(0.108)	(0.107)	(0.293)	(0.173)
Average age movers, origin	0.0490		0.835***	0.841***	0.982***	0.738**	1.253***
	(0.0868)		(0.107)	(0.108)	(0.109)	(0.291)	(0.172)
Year FE	✓		✓	✓	✓	✓	✓
Individual FE		✓					
Origin×destination FE	✓						
Origin×destination×year FE		✓					
Individual×origin FE			✓				
Individual×destination FE		✓					
Indiv×origin×dest FE				✓	✓	✓	✓
R-squared	0.238	0.520	0.465	0.449	0.453	0.458	0.437
Observations	2,721,448	2,292,655	2,162,033	2,138,541	2,138,541	235,635	757,920
Academics	910,085	495,827	469,723	469,255	469,255	53,415	152,419
Institutions	101,335	77,120	70,515	69,983	69,983	16,513	34,847
Countries	148	133	132	132	132	117	126

Note: Panel estimates of (12). The preferred specification, as specified in (15), is in Column (4). The robust standard errors are reported in parenthesis, clustered at the year and the origin-destination country pair. Exchange rate is given in (10). * , ** , *** denote significance at the 10, 5, and 1 percent level.

I have added non-linear terms and their interaction up to the third degree to capture any nuances in the response: the corresponding diagrams without these terms have straight lines, but are otherwise identical. In line with the prediction from the theoretical model, on the top panel we see that academics in a stronger bargaining position are more likely

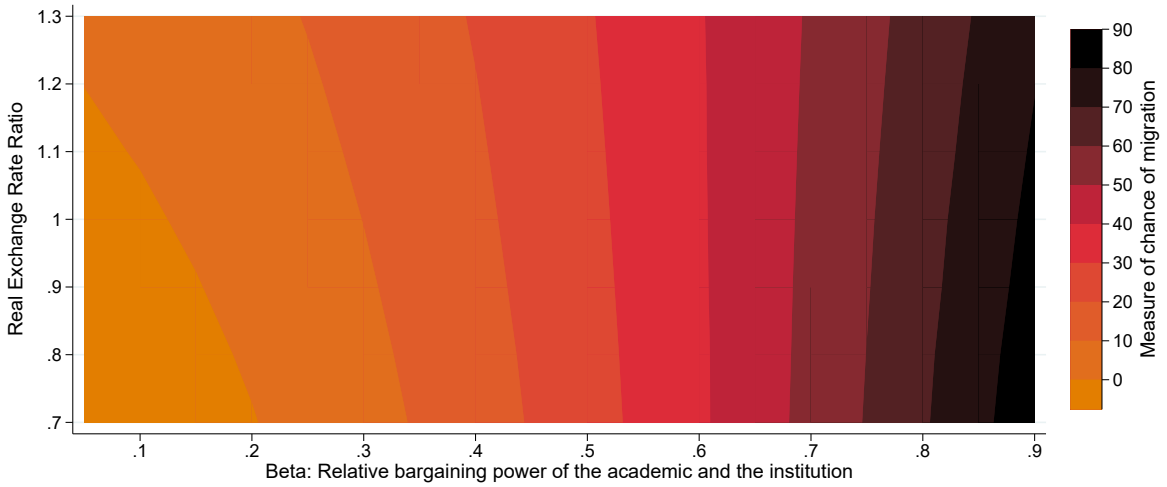
Figure 5: Marginal effects of changes in bargaining power and exchange rate. All academics



Note: The top diagram plots the marginal effect of bargaining power at various levels of the exchange rate, overlaid on the density function of the distribution of the academics bargaining power, obtained from a version of regression in Column (4) in Table 3 augmented by third degree interaction terms between bargaining power and exchange rate. The lower diagram plots the marginal effect of the exchange rate at various levels of the academic's bargaining power.

to emigrate. This effect becomes weaker (the curve becomes less steep) as the normalised exchange ratio increases from 0.7 to 1.3. This is exactly in line with the theoretical prediction in Section 2. The diagram superimposes the density of the academics' relative bargaining power in the year (this measure, the expression in (5), is constructed to lie in $(0,1)$, and less than 0.01% of the observations are outside the $(0.15, 0.85)$ range shown on the axis). The bottom panel shows the different effect of the exchange rate according to the bargaining power of the academics: it increases (decreases) with the exchange rate for low (high) bargaining power. The measure on the RHS vertical axis is the predicted linear probability of migration, multiplied by 100, to avoid leading zeros in the tables, and should in theory be bounded between 0 and 100. Figure 6 presents the same information

Figure 6: Probability of migration



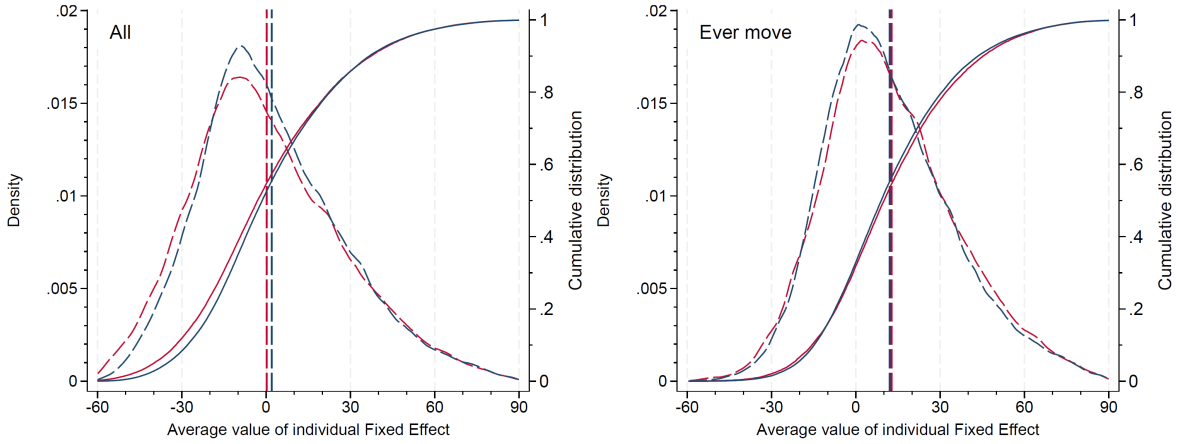
Note: In the Cartesian plane the colour of each point represents the predicted probability, in percent, that an academic with relative bargaining power β measured along the horizontal axis migrates when the exchange rate has the value measured along the vertical axis.

in a different manner: each coloured band contains combinations of exchange rate and bargaining power such that the predicted probability of migration for the academic with the values represented by that point is the one to the corresponding colour on the vertical bar to the right of the diagram.

Returning to Table 3, the positive coefficient of the log of the GDP ratio suggests that academics' tend to emigrate to more prosperous countries than the ones they current live in. Similarly for the quality of life, measured by a combination of low corruption, bureaucratic efficiency, and academic autonomy, and by the academic prestige, given by the frequency of highly cited publications in the country's research institutions. The size of the country, on the other hand, suggests that academics tend to move to smaller countries, that is with fewer publishing academics than the one they live in.[26] The signs of the last four "country" variables, the propensity to emigrate, and the average ages of various subsets of academics are not straightforward to interpret, and should be viewed as controls; in any

[26]There may be reasons to suspect that size differences may affect the propensity to emigrate in a non-linear way. Introducing a quadratic term in Δ_n, the difference in the (log) number of academics in the destination and the origin country produces a coefficient of -0.426^{***}, and change the other coefficients only after the third or fourth significant digit. Calculating the maximum, I found it to be at -22, well outside the range of the variables: in sum the quadratic coefficient adds nothing.

Figure 7: Distribution of individual fixed effects.



Note: The figure reports the kernel densities of the fixed effects obtained from the main regression, Column (4) in Table 3, for men (in blue) and for women (in red). The dashed vertical line is the mean of the distribution. In the LHS the entire sample is considered, on the RHS only the academics who move at least once.

case, excluding them alters only very little the values of the other coefficients. Finally, the variables which vary by institution, those for the number of authors, suggest a tendency to move towards institutions with more first authors and fewer second authors than the academic's current institution. The specification in Columns (4) and (5) differ only in the proxy of wealth, as explained above. The results are essentially unchanged.[27] This is to be expected given that the correlation between the two measures is 0.92.

In the last two columns of Table 3, I explore differences in behaviour between women and men. This is an important question. The Scopus data does not report an academic author's gender, and I have resorted to the approximative method of using the given names to attribute it following established name dictionaries (Raffo, 2016, 2021). In many cases this proved impossible, such as when an author is only listed with the initials, or extremely uncertain or ambiguous. In practice, the gender of only around one quarter

[27] The possible exception of the bargaining power, which increases relative to Column (4), and for GDP, which instead increases. This may suggest that my proxy for wealth, which includes the GDP of the country of residence is a good one: GDP is a component of bargaining power, and one interpretation of these changes could be that GDP of the origin country leads to a higher likelihood of migration *because* it increases the academics wealth via its larger accumulated wealth.

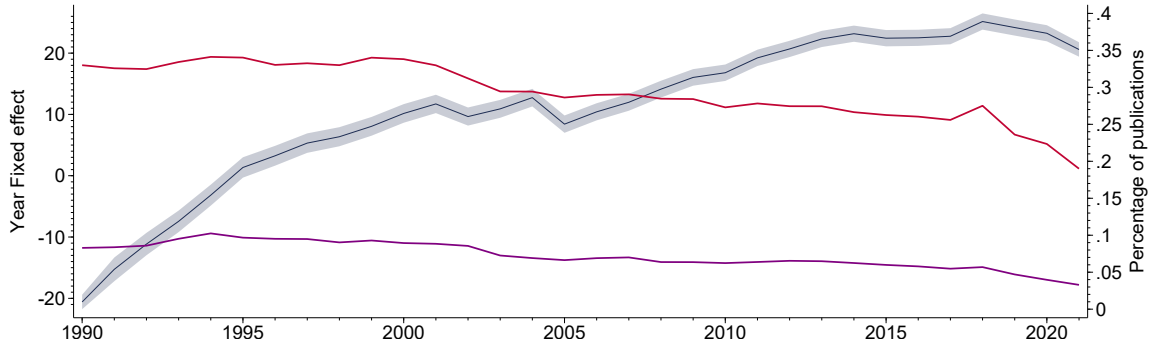
of the academics in the sample could be attributed in this way.[28] Nevertheless, some interesting tentative results can be presented. The last two columns of Table 3 report the separate regressions for the two samples of (likely) women and men. The qualitative features of the result do not highlight any substantial gender difference in the determinants of migration.

To explore further this theme, I compare the individual fixed effects obtained from the main regression, Column (4) in Table 3. For each academic, I have averaged their fixed effect across all the years they are included in the regression. The distributions of these average fixed effects for the two subsets are shown in Figure 7, where I have truncated very flat tails amounting to less than 0.3% of each sample. The panel on the left hand side is the entire regression sample. The RHS panel restricts the sample to those who move at least once. In both panels the red curves refer to the sample of women, the blue ones to the men. In both, I plot the kernel densities, and the cumulative distributions (as the dashed and the solid curves), and the means of the fixed effects in the two samples, as the vertical dashed lines. Note the difference in means and in distributions (confirmed by t and Kolmogorov-Smirnov tests). For the entire sample, on the LHS, the fixed effects for the women subset contains smaller values and has a smaller mean than that of the subset of men. The RHS shows that the *opposite* is true for the subset of the academics who move at least once. This difference between the samples is not something that would be expected a priori and lacks an immediate explanation, and therefore points to differences in moving and migration behaviour between women and men which deserves further analysis.

Not reported in the table, the results also highlight a definite increasing trend in propensity to emigrate: this is shown in Figure 8, which plots the year fixed effects with the corresponding confidence interval at 5%. The dip in the recent years is likely due

[28] Whether gender can be attributed using the given name is itself not random, as academics with certain characteristics are more likely to use given names which can be allocated to a specific gender with a degree of certainty. For example (see online Appendix L), academics with attributable names are less likely to have been in a US or Chinese university (and also in a top US institution), and more likely to have been in a British (and Russell group), German, French, Italian, Spanish, Australian, and Canadian, but there is no statistically significant difference in the date of appearance in the dataset.

Figure 8: Time trend of the propensity to emigrate.



Note: The figure reports the year fixed effects obtained from the main regression, Column (4) in Table 3, with confidence intervals at 5%, in the navy blue areas, measured on the left vertical axis. The right vertical axis measures the percentage of publications in the year published by authors whose affiliation is different in the subsequent year (top red line), and also in a different country (bottom purple line).

to missing information on migration towards the end of the data period, rather than the Covid-19 pandemic. To confirm this, further data is needed to identify moves by academics who will publish in the future. Measured on the RHS vertical axis, the diagram also shows the percentage of observations in each year where a move and a move abroad occur.

The results reported so far are very robust to changes in the specification, as Tables 4 and 5 in this section show. In each of these two tables, I report only the first three coefficients, those for the exchange rate, the bargaining power, and their interaction, and report the full tables in the online appendix. I begin with Table 4. In the first two columns I restrict the sample first to those academics who move at least once in the period, and then to those who change country at least once in the period. This is to capture the idea that some academics may be unable or unwilling to move, irrespective of the financial and professional benefits that a move may bring; similarly some may be prepared to move, but unwilling to change country, and there may be reasons to investigate whether their motivations differ. Naturally the sample size in these cases reduces dramatically, by 40 and 85% approximatively, and yet the thrust of the results in the main regression is

Table 4: Robustness tests

Variables	(1) Movers only	(2) Migrants only	(3) USD XR rate	(4) Academics per capita	(5) Migration as dep var	(6) Log of the XR
Real Exchange rate (log)	29.98***	7.390***	8.213***	19.66***	22.28***	16.70***
	(1.749)	(2.344)	(1.245)	(1.092)	(1.163)	(1.081)
Relative BG power	17.24***	12.40***	11.79***	12.70***	12.96***	9.560***
	(0.375)	(0.560)	(0.287)	(0.245)	(0.269)	(0.0698)
Interaction BG power×XR	-4.840***	-1.286**	-2.291***	-3.093***	-3.407***	-2.839***
	(0.351)	(0.510)	(0.272)	(0.224)	(0.248)	(0.240)
Observations	1,350,337	354,369	2,138,541	2,138,541	2,163,071	2,138,541
Academics	260,876	60,753	469,255	469,255	469,748	469,255
Institutions	68,266	18,002	69,983	69,983	70,568	69,983
Countries	128	126	132	132	134	132

Note: See Appendix K for the rest of the coefficients. In all the columns the estimated specification in Column (4) of Table 3, and so include a constant and a triple interaction fixed effect, except Column (5), where the fixed effect is individual×origin + individual×destination+year. In Columns (1) and (2) the sample is restricted to the academics who change institution at least once in the period, and to those who change country at least once in the period, respectively. In the third and fourth column, the exchange rate is relative to the US dollar, and the number of academics in the country is relative to the population, instead of the log of the total. In the last two columns, the dependent variable is 1 if the country of affiliation has changed, Column (5), and the exchange rate is measured in log, Column (6). * , ** , *** denote significance at the 10, 5, and 1 percent level.

unchanged. It will be interesting to investigate possible explanations for the lower values of the coefficients for exchange rate, bargaining power and their interaction in the sample of those who change country at least once in their career.

In the rest of the table, I return to the original sample to explore different specifications of some of the variables. I begin in Column (3), by replacing the pound sterling exchange rate with the US dollar. The results are similar, the smaller coefficients in the first and third rows due to the higher standard deviation of the dollar relatively to the sterling exchange rate. In Column (4) I replace the number of academics in the country with a different measure, the academic "intensity", which takes into account the overall population. The dependent variable in Column (5), is not a move but a change of country. This implies that the triple interaction fixed effect would be collinear with other variables, and so I replace it with the interaction between individual and origin country, plus that between individual and destination country. Further robustness tests are in Table A7. The key coefficients of interest, those in the first three rows of the table, change minimally. The complete table

Table 5: Different samples of academics.

	(1)	(2)	(3)	(4)	(5)	(6)
	Academics who were at least once in					
Variables	the US	top US	the UK	Russell	China	big EU 4
Real Exchange rate (log)	14.11***	20.82***	40.22***	55.00***	2.709	49.70***
	(2.794)	(5.094)	(6.540)	(10.68)	(5.032)	(2.853)
Relative BG power	10.10***	11.45***	19.77***	23.35***	4.448***	15.45***
	(0.593)	(1.144)	(1.697)	(2.856)	(1.009)	(0.579)
Interaction BG power×XR	-0.437	-1.692	-7.493***	-10.55***	2.905***	-3.436***
	(0.551)	(1.066)	(1.628)	(2.749)	(0.929)	(0.537)
Observations	541,014	144,425	169,112	70,276	302,930	573,089
Academics	103,904	23,676	31,665	11,956	73,846	121,267
Institutions	18,193	5,248	7,184	3,115	8,406	20,343
Countries	106	78	101	83	67	97

Note: See Appendix K for the rest of the coefficients. In all the columns the estimated specification is Column (4) in Table 3. In each column the sample is all academics who publish at least once in a US university, in one of 21 selected US elite universities (footnote 29), in one in the UK, in a Russell group UK university, in one in China, and, in the last column, in one of the four large countries in continental Europe. * , ** , *** denote significance at the 10, 5, and 1 percent level.

is in the online appendix, and it shows that the coefficients for the controls included in Table 3do not exhibit any qualitative change.

In Table 5, the last of the paper, I study the subsamples constructed by selecting academics according to the countries and the institutions they have been affiliated with. Again, I report here only the first three coefficient, and again, the online appendix shows no qualitative difference in the coefficients of the controls. The columns in the table are the result of regression (15) for the sample of the academics who have been affiliated at least once, in turn, to any US university, to an "elite" US university,[29] to any UK university, to one in the UK Russell group, to a Chinese institution, and to one based in Spain, France, Italy, or Germany. The idea is to identify potential differences among groups of academics whose motivation in seeking moves may be different. While there are some such differences, for example academics who have spent at least one year in the UK, or in the EU appear to be more responsive to changes in the exchange rate and in

[29]From the QS ranking for the relevant years, I have constructed a list of the highest placed US universities in the relevant disciplines: Harvard, MIT, Berkeley, Stanford, Chicago, Pennsylvania, Columbia, New York, Michigan, Northwestern, Yale, Princeton, Duke, Indiana, Cornell, Michigan State, Arizona, Boston, Southern California, Penn State, Minnesota. However, even fairly substantial changes to the list do not alter the qualitative nature of the results.

their relative bargaining power, and even more so if they have been in a Russell group university, while the opposite seems to be the case for academics who have spent some time in China, the table does not show any meaningful qualitative difference. Table A8 shows that other subsamples again have similar responses to exogenous changes.

6 Conclusion

In this paper I have laid the foundation to the analysis of the migratory flows of the academic scholars whose international visibility is determined by their publications in recognised outlets. The theoretical model builds on a plausible minimal set of assumptions, which lead to precise testable implications, summarised formally in Hypothesis 1. Encouragingly, these are confirmed in the comprehensive empirical analysis of the location choices of nearly one million academics across a 33 year period: individuals are motivated by the characteristics of the various countries they can move to, and their propensity to move depends on short term economic fluctuations of the relative purchasing power of the currency in these countries. The relative bargaining power of the academic and her employer, which I proxy with number and quality of publications, and, in line with the theoretical prediction, I adjust for age, also affect both the propensity to migrate, which it increases, and the responsiveness to short term fluctuations of the exchange rate, which it dampens.

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