

Understanding internal migration trends in OECD countries

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Introduction

In this paper, we refer to internal migration as a change of residence that crosses administrative jurisdictions within national borders. In Australia, for example, it refers to all changes of residence that cross states.

Empirical research on internal migration has been increasingly concerned with long-term trends after Fischer (2002) revealed that internal migration in the United States had declined since the 1960s. A comparable decline has also been observed in Canada (Saunders 2018), the United Kingdom (Champion and Shuttleworth 2017), and Australia (Bell, Wilson, et al. 2018).

However, this downward trend is not universal. Bell, Charles-Edwards, et al. (2018) have shown that internal migration has declined in about two-thirds out of 66 countries, but has increased or remained stable in the remaining third, including Austria and Finland.

Objective

We attempt to solve this puzzle: why internal migration has declined in some countries while it has remained stable or even it has increased in others?

Data

We collect annual data on internal migration for 18 OECD countries from various sources, including OECD regional statistics (OECD 2020) and official national statistics. Table 1 summarises the time-series data assembled.

Table 1: Description of the internal migration data by country

Country	Period	Division	Source
Australia	1972–2018	7 states and 1 territory	Australian Bureau of Statistics
Austria	1990–2018	9 federated states	Statistics Austria, Migration statistics
Canada	1970–2018	10 provinces and 3 territories	Statistics Canada
Czech Republic	1995–2018	8 oblasts	OECD Regional Statistics
Finland	1990–2018	5 major regions	Official Statistics of Finland: Migration
Germany	1990–2017	16 states	OECD Regional Statistics
Hungary	1995–2018	16 planning regions	OECD Regional Statistics
Italy	1996–2018	31 regions	Italian National Institute of Statistics
Japan	1972–2018	47 prefectures	Statistics of Japan, Report on internal migration
South Korea	1972–2018	17 provinces	Statistics Korea, Internal migration statistics
Netherlands	1970–2018	12 provinces	Statistics Netherlands, Population from 1899
Norway	1987–2018	7 regions	Statistics Norway, Migration
Poland	1993–2018	16 provinces	Statistics Poland, Internal and foreign migration
Switzerland	1996–2018	4 groups of regions	OECD Regional Statistics
Spain	1988–2018	19 autonomous communities	INE, Residential variation statistics
Sweden	1978–2018	8 national areas	Statistics Sweden, Population statistics
England and Wales	1978–2018	8 regions in England plus Wales	Office for National Statistics
United States	1980–2018	50 states and 1 district	IPUMS-CPS

To understand the association between inter-regional migration and potential drivers suggested in the literature, we assembled annual time-series of explanatory variables, as listed in Table 2.

Table 2: Summary of the data sources for each variable.

Variable	Measure	Source
Income	Constant GDP per capita of 2015 in USD (PPP)	OECD
Age composition	Share of population aged 30 to 39	OECD
Interest	Share of interest users	World Development Indicators by World Bank
Education	Share of population with tertiary education	OECD and International Labour Organisation
Regional disparities	CV of regional GDP per capita	OECD and Statistics of Japan
International migration	Net international migration per thousands	Eurostat, OECD and agencies

Methods

We estimate a dynamic panel time series model which allows us to infer long- and short-run causal effects. Let y_{it} the vector with observations of the dependent variable, in our case internal migration, x_{it} is a $k \times 1$ vector of explanatory variables. Pesaran, Shin, and Smith (1999) considered an error correction parametrisation:

$$\Delta y_{it} = \phi(y_{it-1} - \theta' x_{it}) + \sum_{j=1}^{p-1} \lambda_{ij}^* \Delta y_{it-j} + \sum_{j=0}^{q-1} \delta_{ij}^* \Delta x_{it-j} + \mu_i + \epsilon_{it}$$

The θ s represent the long-run coefficients, the ϕ is the error correction term which provides the speed of adjustment towards the long-run equilibrium. A negative and significant ϕ_1 is evidence of long-run causality running from the significant explanatory variables to the dependent variable. The significant δ s suggest short-run causality from the associated regressors to the dependent variable.

The μ_i s control for unobserved time-invariant cross-country heterogeneity, which in the case of the intensity of internal migration, can be due to differences in the number and size of the regions between countries.

We also account for global cross-sectional dependence by cross-sectionally demeaning all variables.

Results

Descriptive findings

Figure 1 reports one-year inter-regional migration intensities (RMI) for 18 OECD countries for the 1996–2018 period, which are computed as the number of people that changed administrative regions within a country divided by the total population at risk, expressed per thousands.

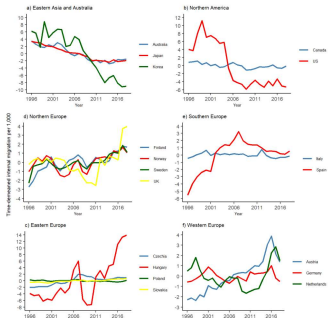


Figure 1: One-year inter-regional migration intensities of 18 OECD countries, 1996–2018

Figure 2 shows trends for each explanatory factor.

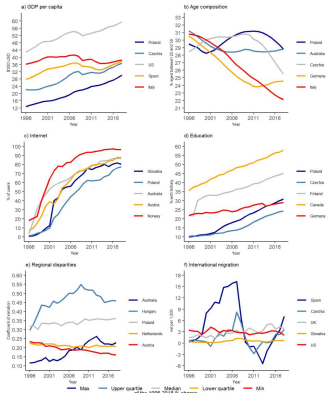


Figure 2: Trends in the explanatory variables, 1996–2018

Estimation

The empirical estimation of the Pooled Mean Group (PMG) estimator includes all the variables in logarithms except the net international migration rate since it contains negative values. Table 3 shows the results.

Table 3: Pooled mean group estimation.

Variable	Coefficients	p-value
Long run		
2009log	0.719	0
GDP	0.086	0.338
interest	0.063	0.001
education	0.141	0.003
disparity	0.092	0.005
international	0.008	0.017
ECT	-0.428	0
Short run		
d Income	0.071	0.919
d GDP	0.297	0.392
d interest	0.05	0.38
d education	0.107	0.243
d disparity	0.266	0.013
d international	0.003	0.751
constant	-0.027	0.746
Wasserman test	1.01	0.905

All the included factors but GDP per capita have a significant causal relationship with internal migration at the 10% level in the long run, while in the short run, internal migration is only linked to changes in regional disparities. Demographic, technological, and economic transformations influence internal migration trends. Because these transformations occur at different paces across countries, they lead to varying trends in internal migration. Moreover, similar trends in internal migration are explained by different drivers.

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