

# Data integration for measuring emigration flows: a new approach in the Italian case

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# Aim of the work

Establish a coherent and consistent data base that contains sufficiently detailed, up-to-date and accurate information by mean of data integration from several sources

(Frans Willekens, European Journal of Population 10: 1-42, 1994)

The outputs of the process should:

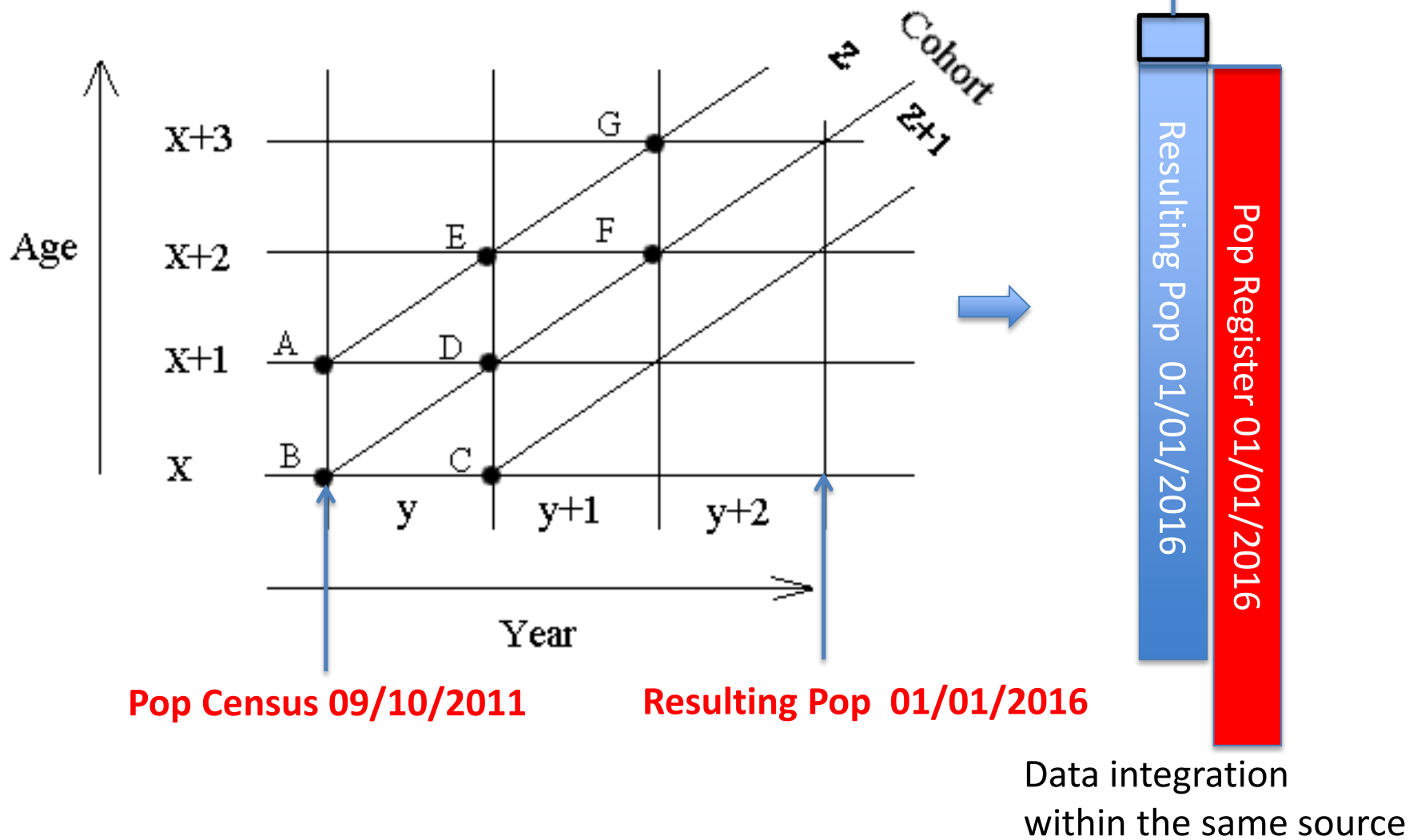
1. meet the needs of users (relevance)
2. accurately and reliably portray reality (accuracy and reliability)
3. be consistent internally, over time and comparable between regions and countries; it is possible to combine and make joint use of related data from different sources (coherence and comparability)

# Migration statistics: two issues

1. Conceptual issue: difference between administrative concept and statistical definition (gap between supply and demand) .
  - Illegal staying in the country
  - 12 months rule
2. Measurement issue: how to measure emigration flows (reliability of the official figures)
  - “missing” flows (excluded from the official statistics)
  - deregistration ex officio (excluded from the official statistics)

# 1 Measurement issue: missing flows. Record linkage between Micro Demographic Account and Population Registers

Do they exit the population by emigration or death?



# Administrative sources and presence on the territory

Time period from January 2012 to December 2013																								Type of presence in labor and education registers	
Ja	F	M	A	M	Jn	Jl	A	S	O	N	D	Ja	F	M	A	M	Jn	Jl	A	S	O	N	D		
																								1	continuous in 2012-2013
																								2	continuous, mainly in 2012
																								3	continuous, mainly in 2013
																								4	continuous over December 2012
																								5	continuous with pauses
																								6	seasonal records
																								7	scattered in 2012 and 2013
																								8	records only in December 2012
																								9	short records only in 2012
																								10	scattered only in 2012
																								11	short records only in 2013
																								12	scattered only in 2013

**Availability of many administrative sources: labor and education registers, consular register, tax returns register, earnings, retired, and non-pension benefits registers, permits to stay.**

# 1 Measurement issue: missing flows. Data integration with other administrative sources

<b>Missing flows by event of exit</b>	<b>Administrative sources</b>	<b>A.V.</b>
a) Deaths	tax returns register	22,475 ❌
b) National emigrants	consular register	49,280 ✅
c) Other emigrants	no signals	135,984 ✅
d) Potential emigrants	with signals of labour/study	88,658 (?)
<b>Total</b>		<b>296,397</b>

At the end of the process more than 250 thousand individuals have been identified as emigrant and will be included in the official statistics

## 2 Measurement issue: deregistration ex officio

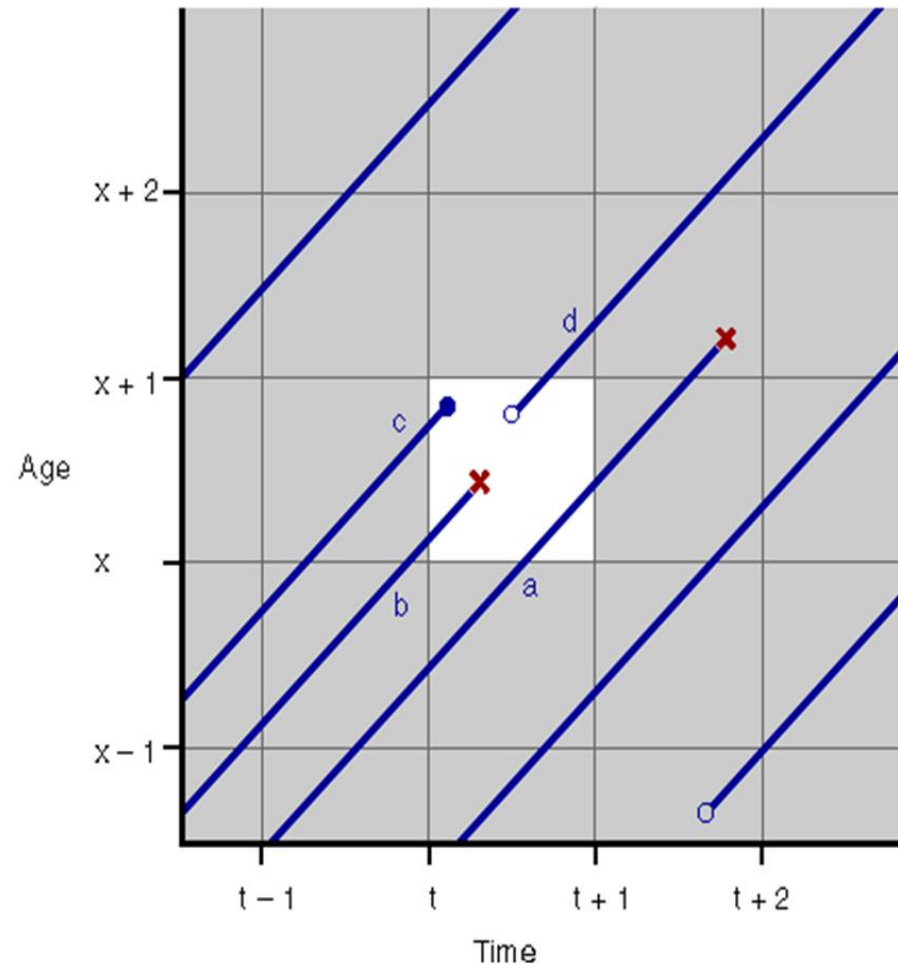
### From an administrative to a demographic balance

From the Census date (09/10/2011) to 01/01/2016 there have been 449,704 deregistrations ex officio.

293,988 individuals are not present in the stock population data of the following years

They have likely left the country without informing the administrative accountable office of their departure.

Those deregistrations are included in the demographic balance as «deregistration for other reasons» and not considered as emigration flows



# Information to be estimated

All the main information about flow ('who', 'when', 'where') are known in the case of people that declare their departure



'Who' is known. 'When' and 'where' are unknown in the case of deregistration ex officio

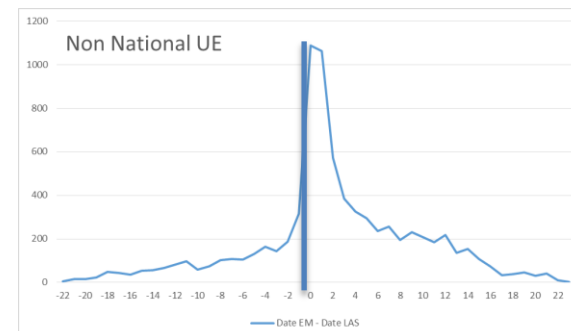
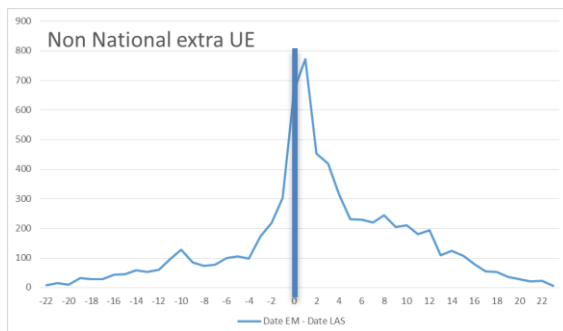
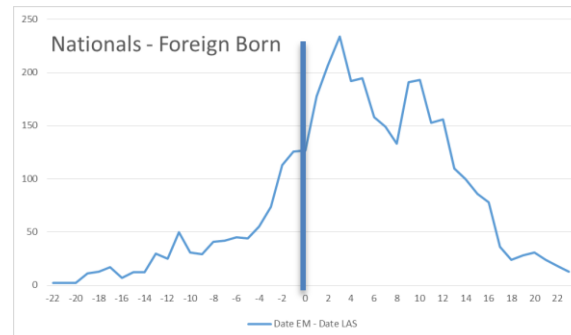
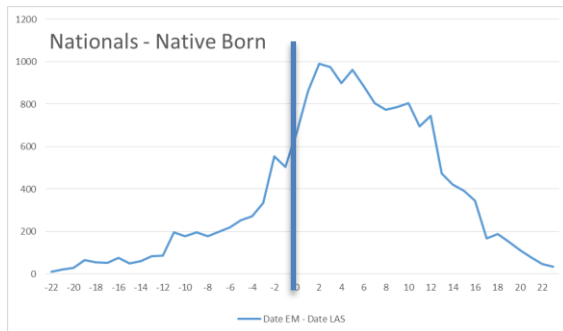




# Emigration to abroad

From the Population Census (09/10/2011) to 01/01/2016 there have been 409,758 emigrations to abroad. Every individual emigration flow has been associated with the respective Administrative Signal on the territory. The underlying idea is that there is a relationship between the Date of emigration (Date EM) and the date of the Latest Administrative Signal (Date LAS) and that the two Dates are related

**[Diff EMLAS = Date EM – Date LAS] (in months)**

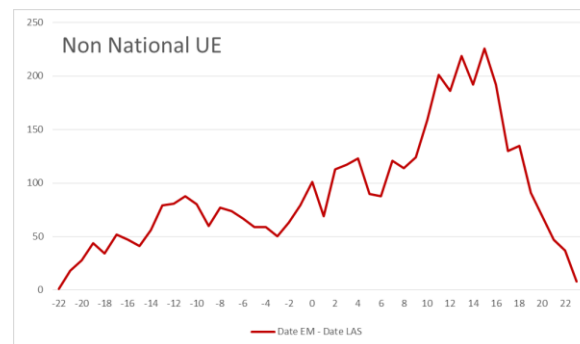
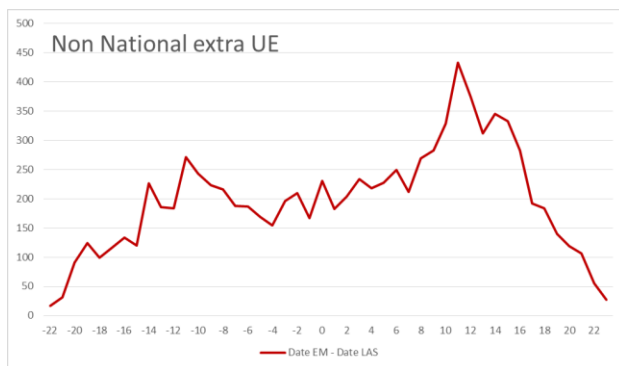
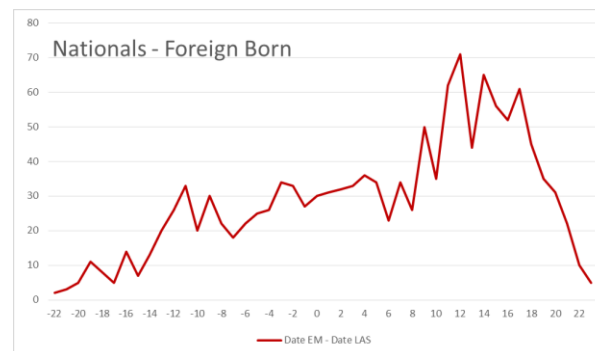
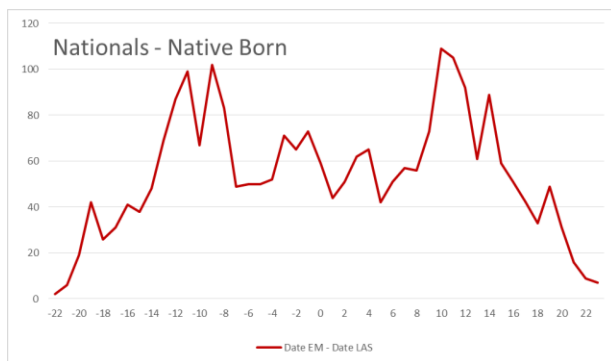


# Deregistration ex officio

Date of deregistration ex officio (Date DER) of a person does not correspond to the date of occurrence of the emigration (Date EMIG).

Also the individual deregistration ex officio has been associated with the Administrative Signal on the territory.

**Diff DRLAS= Date DER – Date LAS**



# Deregistration ex officio

Diff EMLAS distribution (by CTZ and CTB) has been used to estimate the date of occurrence of the emigration (Date EMIG\*) for those deregistration carried out ex officio

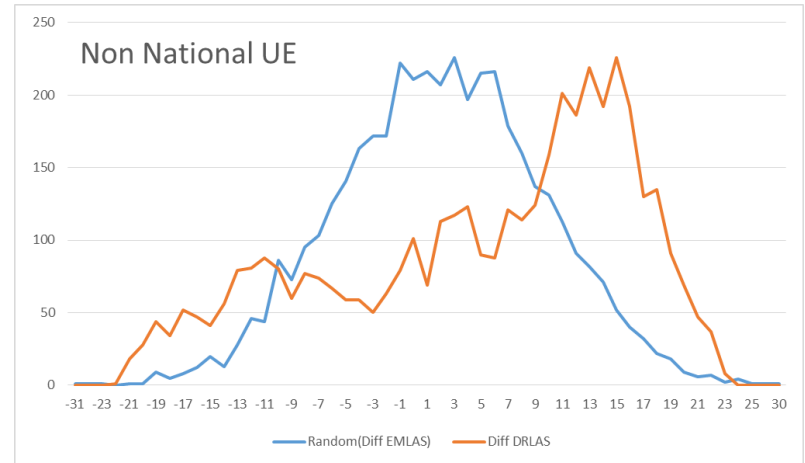
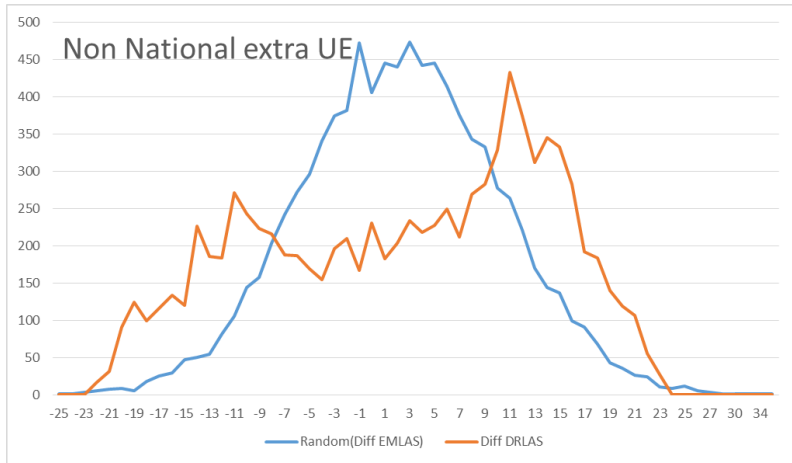
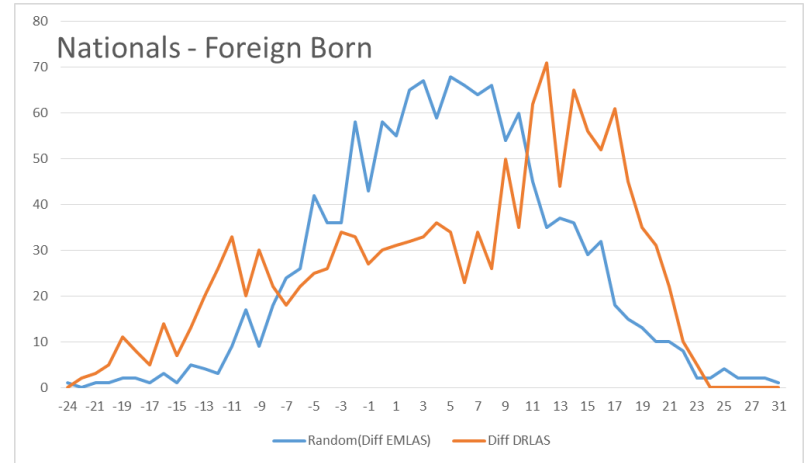
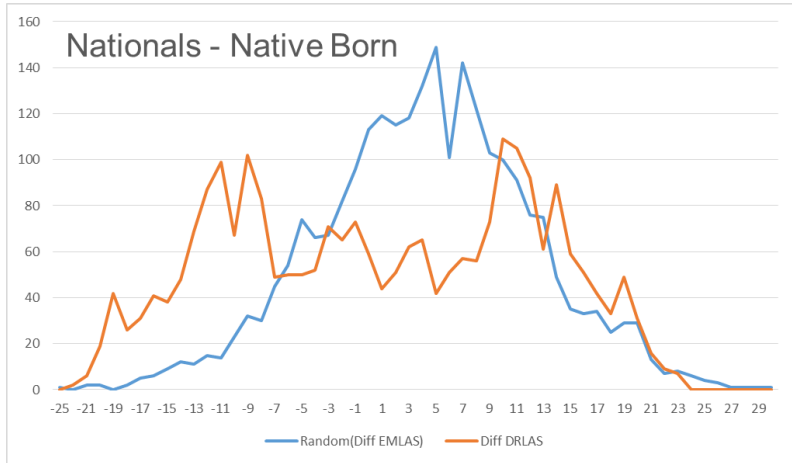
Diff EMLAS= Date EMIG – Date LAS (normally distributed)

Diff DRLAS= Date DER – Date LAS

Random (Diff EMLAS)= Date EMIG\* – Date LAS 

**Date EMIG\* = Random(Diff EMLAS) + Date LAS**

# Results (1)



— Random(Diff EMLAS)

— Diff DRLAS

## Results (2)

### Deregistration ex officio and other missing emigration flows by year of estimated emigration and Citizenship

<b>Years (estimated)</b>	<b>Nationals</b>	<b>Not Nationals</b>	<b>A.V.</b>
2011 (from 09/10)	11,930	36,514	48,444
2012	34,202	87,204	121,406
2013	36,142	90,470	126,612
2014	42,082	91,571	133,653
2015	45,041	92,752	137,795
<b>Total</b>	<b>169,397</b>	<b>398,513</b>	<b>567,910</b>

## Results (3)

### Immigration, emigration flows and Net migration (observed and estimated\*) by Citizenship - Year 2016

Citizenship	Immigration	Emigration	Net MIG	Emigration*	Net MIG*
	Observed			Estimated	
Nationals	30,052	102,259	-72,207	147,300	-117,248
Non Nationals	250,026	44,696	205,33	137,450	112,576
<b>Total</b>	<b>280,078</b>	<b>146,955</b>	<b>133,123</b>	<b>284,750</b>	<b>-4,672</b>

## First Conclusions

- Measuring migration movements of populations in different countries is a challenging task.
- Administrative sources are an extremely powerful tool and a potential source of information for emigration statistics.
- The Italian case provided empirical evidence of the issues to be confronted and the challenges to the use of a data integration for improving the quantity and quality of data on emigration.
- A coherent and consistent data base that contains detailed, up-to-date and accurate information allows to study migration through a longitudinal approach (Return Migration, Circular Migration)