Linking administarative data for better migration statistics: two examples from Switzerland

Session: Improvements in use of administrative data for migration statistics

UNECE – Group of Experts on Migration Statistics

Geneva, Switzerland, 26-28 October 2022

Johanna Probst, Swiss Federal Statsitical Office, unit Demography and Migration

Introduction

Switzerland: complete and high quality statistics on migration

Are there any gaps?

- Duration of stay
- Circular migration / mobility
- Reasons motivating immigration

OASI number since 2011

Overview

1. Linking survey and register data to explore immigration reasons

1.1 Aims & methods

1.2 Results

2. Linking various register sources for longitudinal data on migration and stay

2.1 Aims & methods

2.2 Results

1. Linking survey and register data to explore migration reasons

1.1 Aims & methods

Context and state of the art

Common distinction: forced / voluntary

Common categories:

- Labour/education
- Asylum
- Family

Migration reasons may be multiple

Official statistics: existing data sources

Register: ZEMIS run by migration authorities (SEM)

→ Reason = legal ground for right to stay delivered by SEM

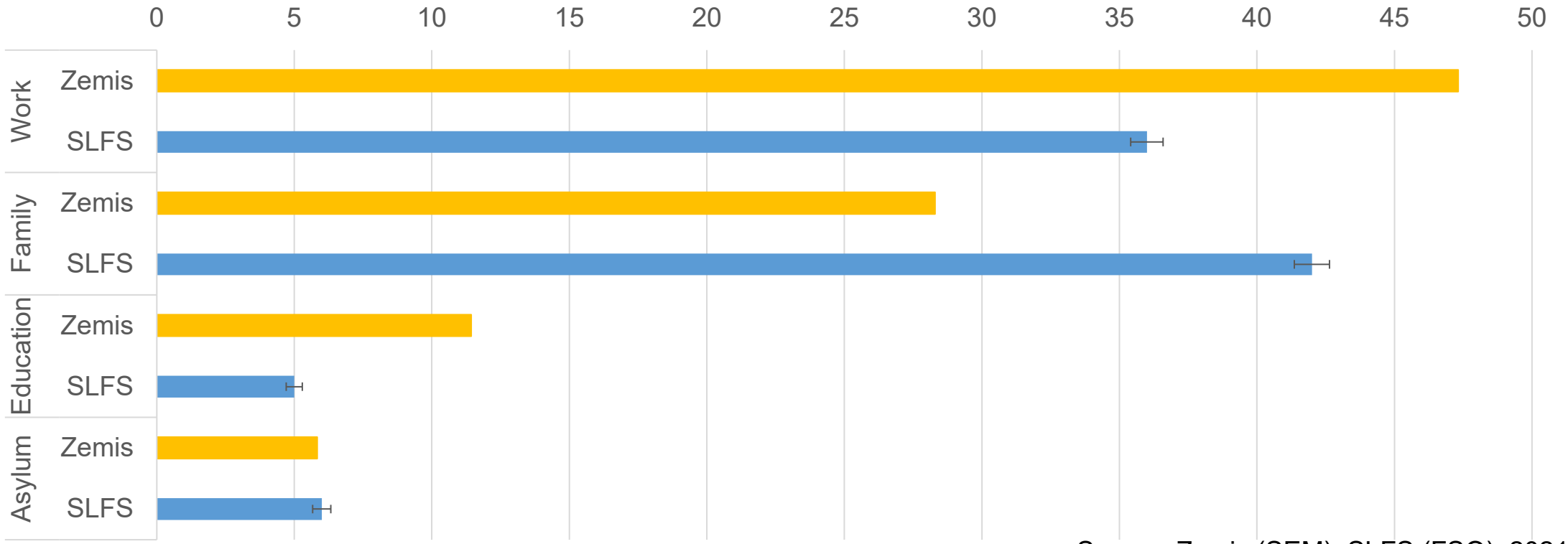
→ Universe = all foreign nationals immigrating to Switzerland

Survey: SLFS carried out by FSO (comparability EUROSTAT)

→ Reason = answer to «main reason for last immigration to CH?»

→ Universe = foreign born (filter) participants of SLFS

Official statistics: differences in results



Source: Zemis (SEM), SLFS (FSO), 2021

Aims and questions

1. Making best use of administrative and survey data

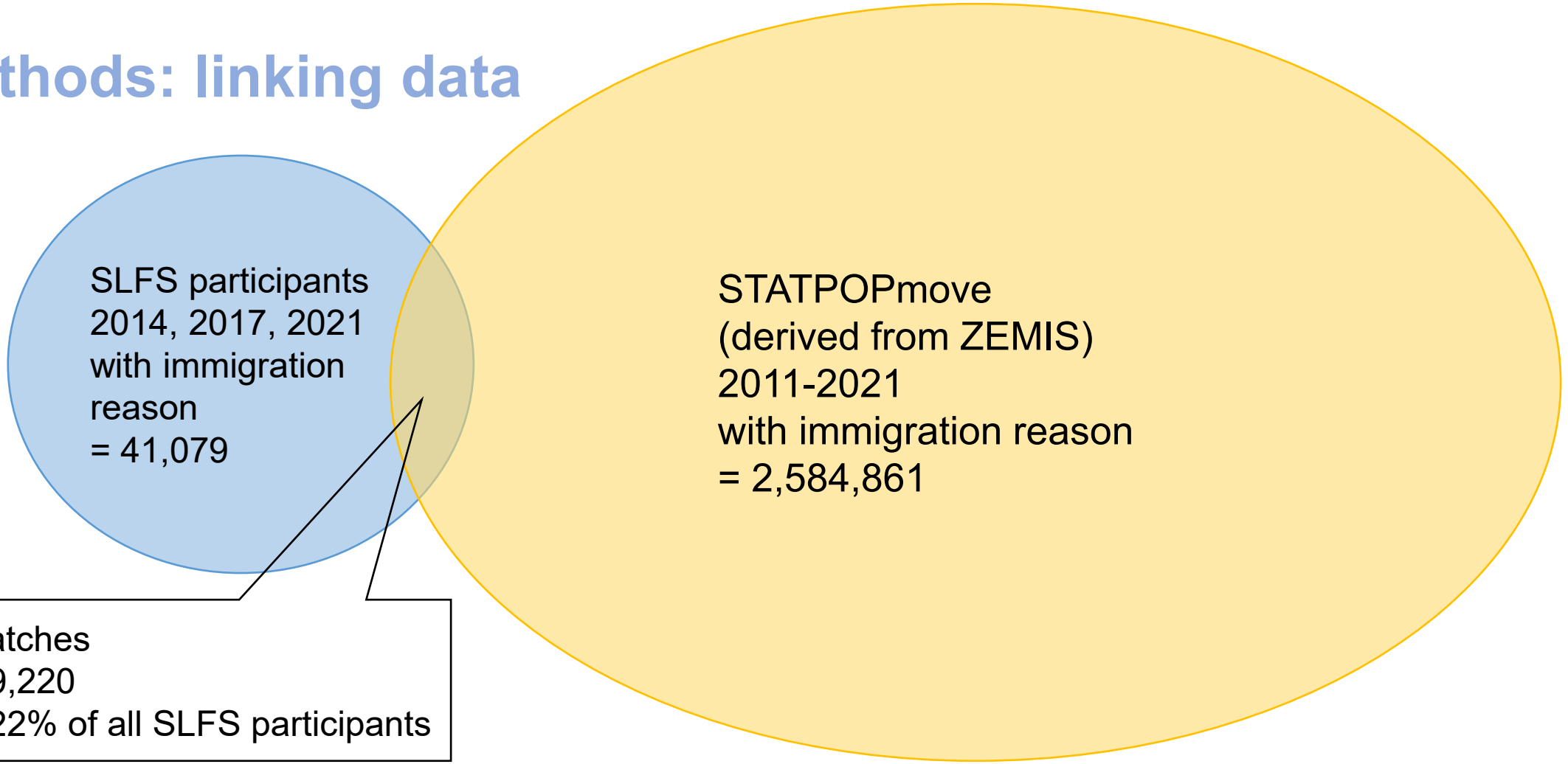
→ *Which data sources are adequate for what purpose?*

2. Improving the interpretation of the available data on immigration reasons

→ *How do immigration reasons differ along the used data source?*

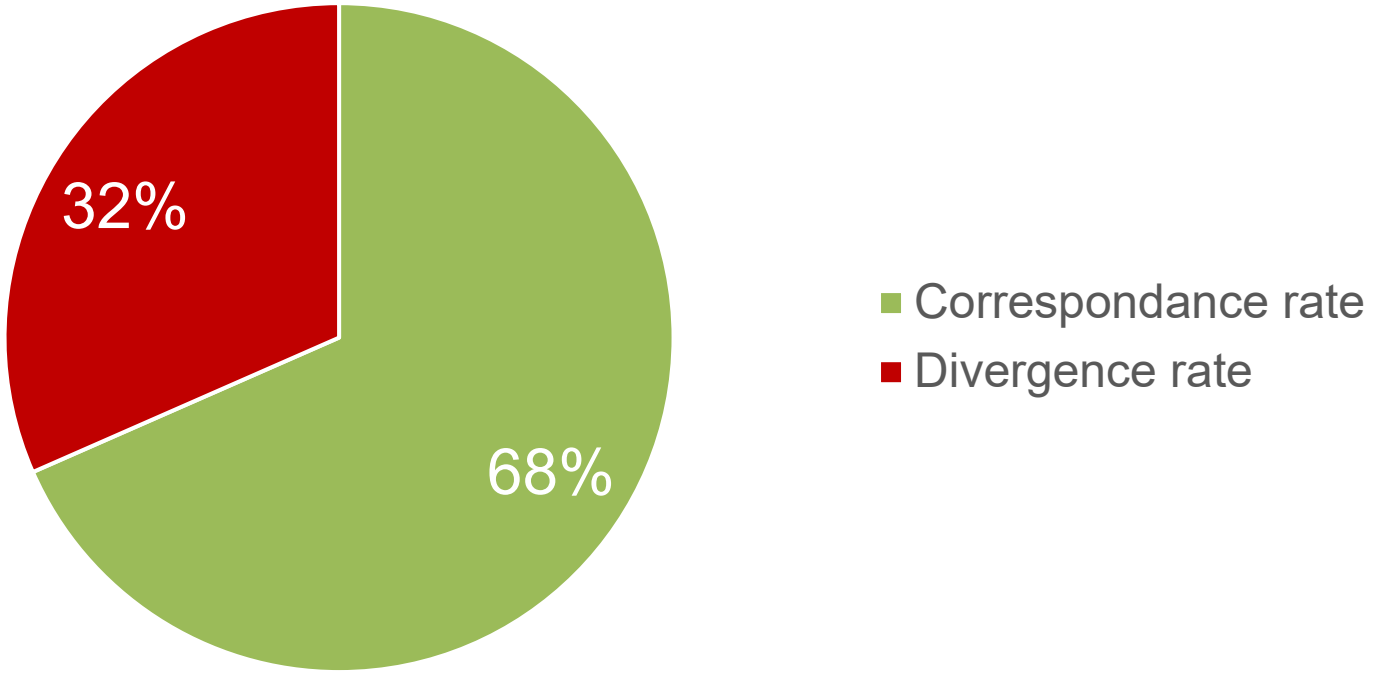
→ *Which independent variables may explain the observed discrepancies?*

Methods: linking data



1.2 Results

Overall correspondance / divergence

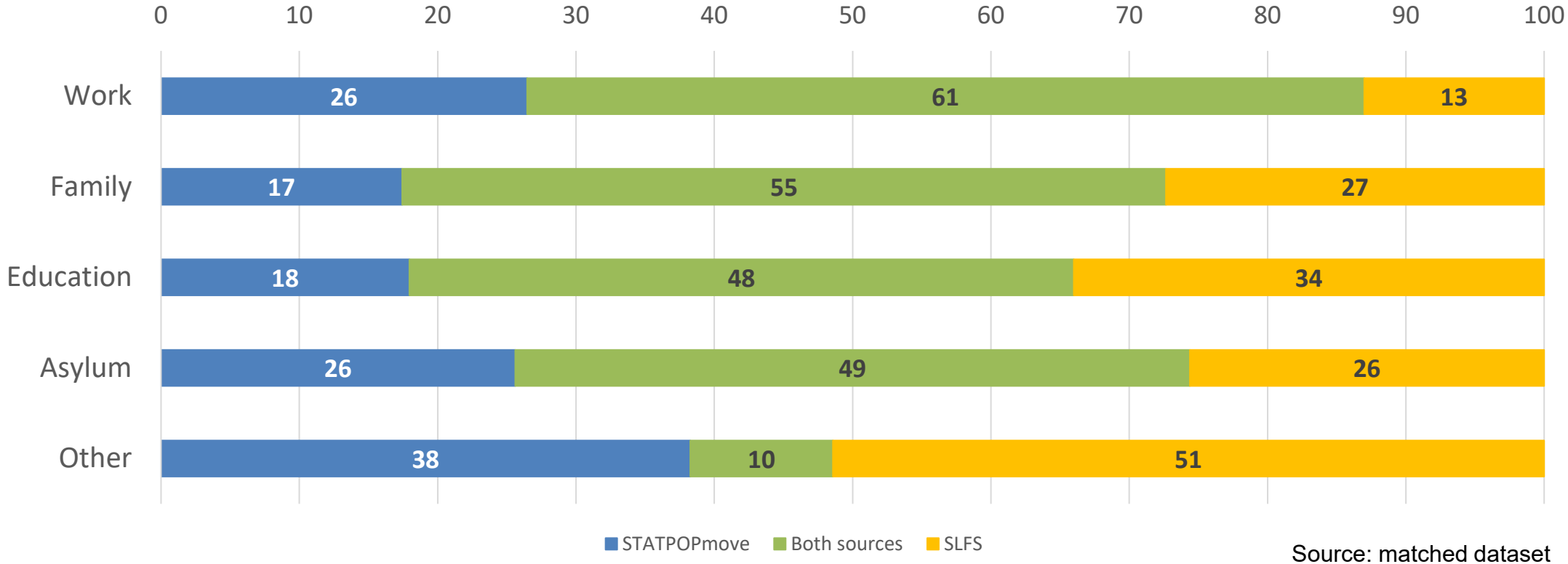


Correspondence and divergence of reasons according to source, absolute numbers

		STATPOPmove					
		Total	Work	Family	Education	Asylum	Other
SLFS	Total	9220	4772	3256	452	61	679
	Work	4034	3320	473	53	3	185
	Family	3700	834	2475	56	13	322
	Education	562	155	56	329	0	22
	Asylum	61	2	13	0	40	6
	Other	863	461	239	14	5	144

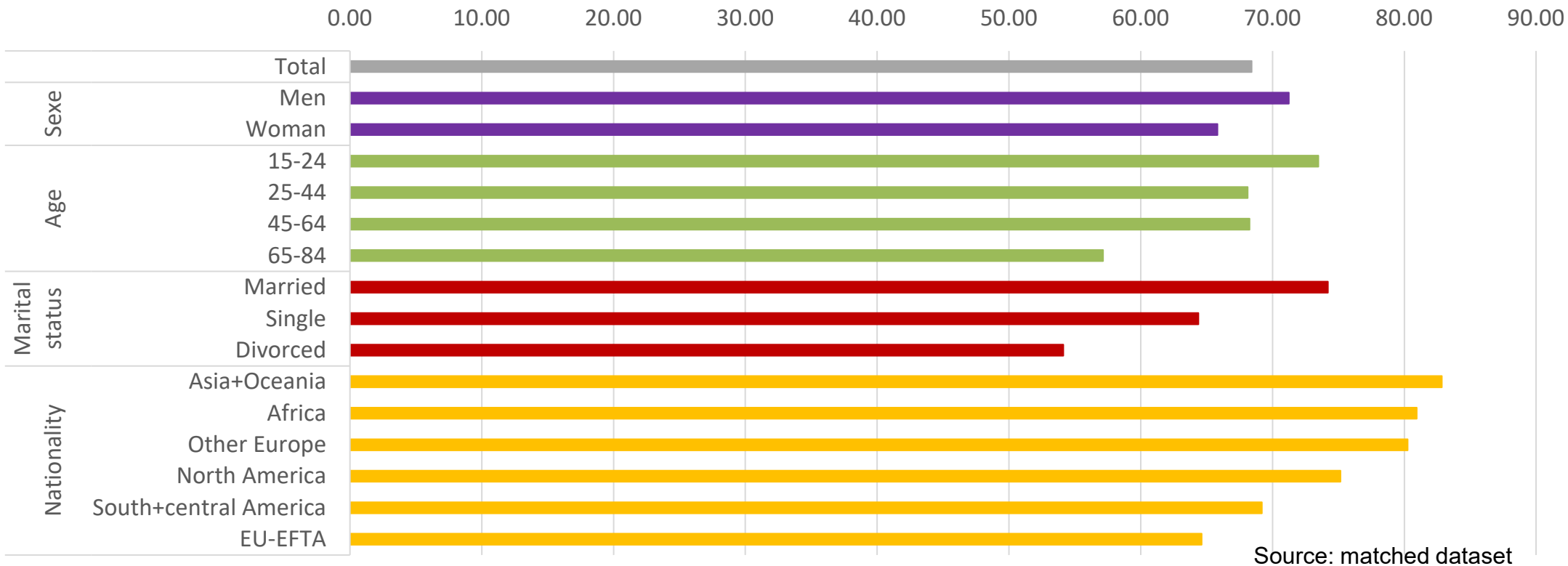
Source: matched dataset

Relative correspondence of reasons according to source, in % of the total number of cases mentioning the reason



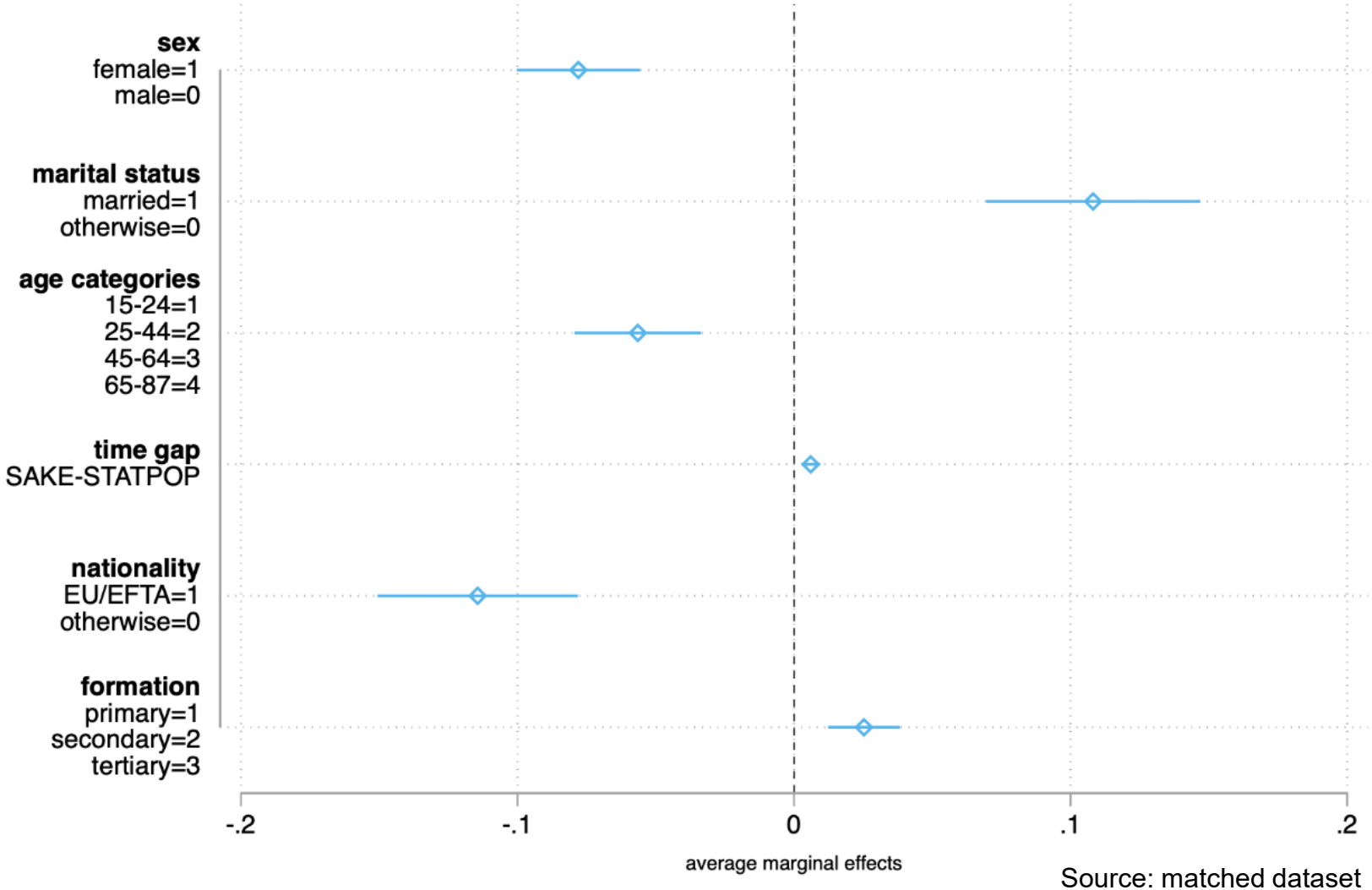
Source: matched dataset

Correspondence rates according to sociodemographic profile, in %



Source: matched dataset

Logistic regression



Source: matched dataset

Conclusions

Register and survey indicate different reasons in 1/3 of the cases (in the matched dataset, no representativity!)

When reasons are multiple, indication is likely to diverge

Register and survey seem to measure different concepts:

- Register: “reasons for legal admission”
- Survey: “(subjective) immigration reason”

Practical conclusion: discussion on adequate labels?

2. Linking various register sources for longitudinal data on migration and stay

2.1 Aims & methods

Point of departure

Since systematic introduction of OASI (2010), linkages to build biographies are technically possible

Longitudinal demograpic statistics (DVS) based on STATPOP (stocks and flows)

→ 5 registers are linked in DVS

Aim

Offer a time-harmonized longitudinal population dataset for cohort analysis → save ressources by preventing demands

Assure quality by unique and transparent production rules

Enrich official demographic statistics (new longitudinal indicators, especially on return migration, circular migration, duration of stay)

Main characteristics

Cummulative: ca. 11,000,000 records since 31.12.2010

Modular architecture: births/deaths, immigration/emigration

Time-coherence: complete revision each year to assure correct order of events (ex: no event befor birth, no successive immigrations)

Completeness: taking into account of the permanent *and non-permanent* resident population

Production

Basis: STATPOP stocks & flows, quaterly and annual data

→ data processing (updating communes and OASI numbers)

→ imputation of missing movements (flag)

→ iterative elimination of time-inconsistencies (ordering data)

Result: consolidated longitudinal dataset

Variables and movements available

Variables:

- Date of birth
- Sexe
- Place of birth
- Nationality
- Residence permit

Movements:

- Presence on 31.12.2010
- Birth / death
- Immigration / emigration
- Naturalization
- Change residence permit

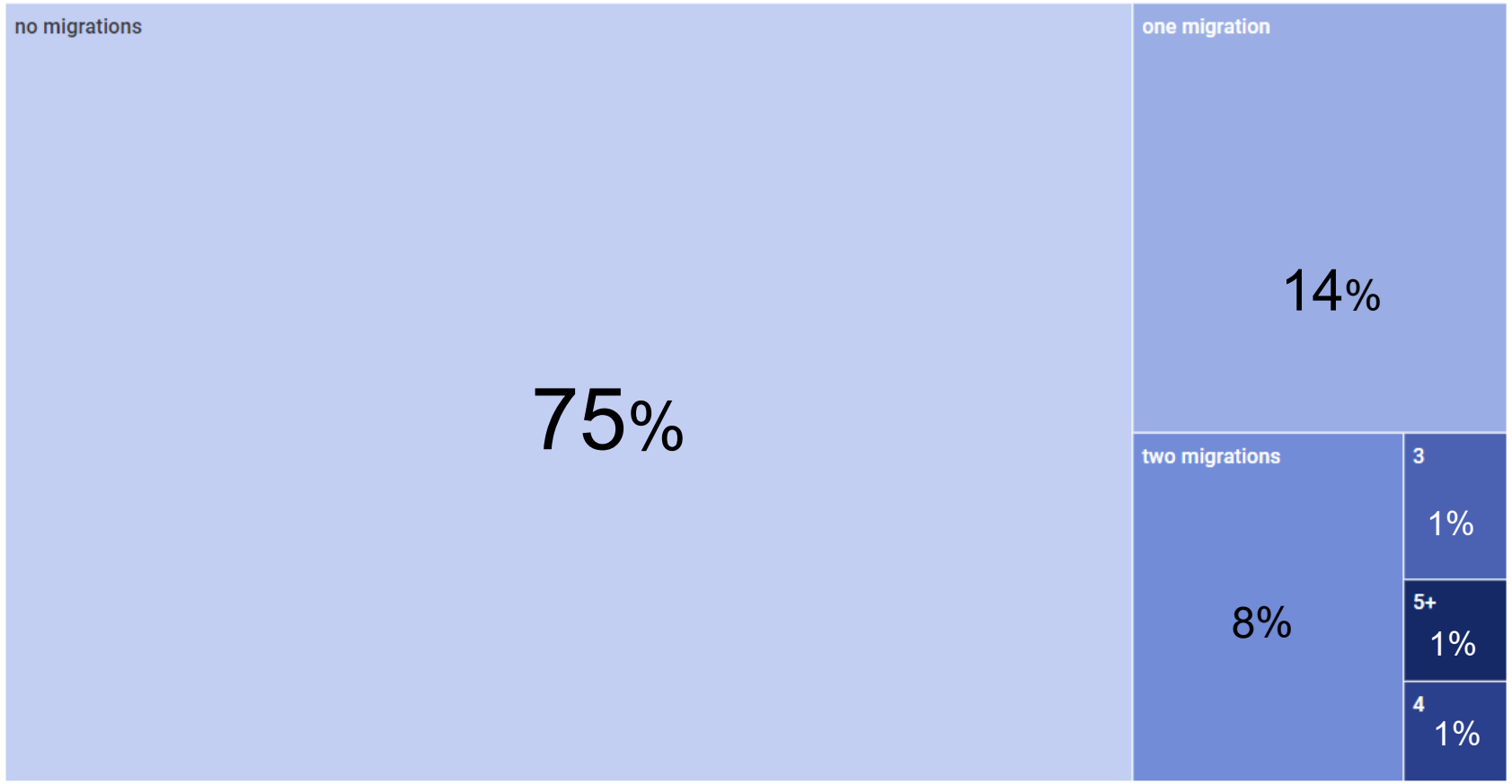
referenceDate	statDate	STATYEAR	pseudoVN	dateOfBirth	age	sex	stateOfBirth	municipality	CHcomesFr	CHarrivalDate	nationality	residentPermit
31.12.2021	31.12.2014	2014	glbrzjudPrT86af	28.05.1984	30	2	8207	-3	8212	01.05.2014	8207	2
31.12.2021	31.12.2015	2015	glbrzjudPrT86af	28.05.1984	31	2	8207	-3	8212	01.05.2014	8207	2
31.12.2021	31.12.2016	2016	glbrzjudPrT86af	28.05.1984	32	2	8207	-3	8212	01.05.2014	8207	2
31.12.2021	31.12.2017	2017	glbrzjudPrT86af	28.05.1984	33	2	8207	-3	8212	01.05.2014	8207	2
31.12.2021	31.12.2018	2018	glbrzjudPrT86af	28.05.1984	34	2	8207	-3	8212	01.05.2014	8207	2
31.12.2021	31.12.2019	2019	glbrzjudPrT86af	28.05.1984	35	2	8207	-3	8212	01.05.2014	8207	2
31.12.2021	31.12.2020	2020	glbrzjudPrT86af	28.05.1984	36	2	8207	-3	8212	01.05.2014	8207	3
31.12.2021	31.12.2021	2021	glbrzjudPrT86af	28.05.1984	37	2	8207	-3	8212	01.05.2014	8207	3
31.12.2021	31.12.2016	2016	JUH3p0XsfX5W	17.07.2016	0	2	8100	6458	-8	31.12.9997	8212	2
31.12.2021	31.12.2017	2017	JUH3p0XsfX5W	17.07.2016	1	2	8100	6458	-8	31.12.9997	8212	2
31.12.2021	31.12.2018	2018	JUH3p0XsfX5W	17.07.2016	2	2	8100	6458	-8	31.12.9997	8212	3
31.12.2021	31.12.2019	2019	JUH3p0XsfX5W	17.07.2016	3	2	8100	6458	-8	31.12.9997	8212	3
31.12.2021	31.12.2020	2020	JUH3p0XsfX5W	17.07.2016	4	2	8100	6458	-8	31.12.9997	8212	3
31.12.2021	31.12.2021	2021	JUH3p0XsfX5W	17.07.2016	5	2	8100	6458	-8	31.12.9997	8212	3
31.12.2021	31.12.2014	2014	BIT+1npd/UXi7C	14.10.2013	1	1	8212	-3	8212	02.05.2014	8212	2
31.12.2021	31.12.2015	2015	BIT+1npd/UXi7C	14.10.2013	2	1	8212	-3	8212	02.05.2014	8212	2
31.12.2021	31.12.2016	2016	BIT+1npd/UXi7C	14.10.2013	3	1	8212	-3	8212	02.05.2014	8212	2
31.12.2021	31.12.2017	2017	BIT+1npd/UXi7C	14.10.2013	4	1	8212	-3	8212	02.05.2014	8212	2
31.12.2021	31.12.2018	2018	BIT+1npd/UXi7C	14.10.2013	5	1	8212	-3	8212	02.05.2014	8212	3
31.12.2021	31.12.2019	2019	BIT+1npd/UXi7C	14.10.2013	6	1	8212	-3	8212	02.05.2014	8212	3
31.12.2021	31.12.2020	2020	BIT+1npd/UXi7C	14.10.2013	7	1	8212	-3	8212	02.05.2014	8212	3
31.12.2021	31.12.2021	2021	BIT+1npd/UXi7C	14.10.2013	8	1	8212	-3	8212	02.05.2014	8212	3
31.12.2021	31.12.2014	2014	o2tJgDKQkWG	14.10.2013	1	1	8212	-3	8212	02.05.2014	8212	2
31.12.2021	31.12.2015	2015	o2tJgDKQkWG	14.10.2013	2	1	8212	-3	8212	02.05.2014	8212	2
31.12.2021	31.12.2016	2016	o2tJgDKQkWG	14.10.2013	3	1	8212	-3	8212	02.05.2014	8212	2
31.12.2021	31.12.2017	2017	o2tJgDKQkWG	14.10.2013	4	1	8212	-3	8212	02.05.2014	8212	2
31.12.2021	31.12.2018	2018	o2tJgDKQkWG	14.10.2013	5	1	8212	-3	8212	02.05.2014	8212	3
31.12.2021	31.12.2019	2019	o2tJgDKQkWG	14.10.2013	6	1	8212	-3	8212	02.05.2014	8212	3
31.12.2021	31.12.2020	2020	o2tJgDKQkWG	14.10.2013	7	1	8212	-3	8212	02.05.2014	8212	3
31.12.2021	31.12.2021	2021	o2tJgDKQkWG	14.10.2013	8	1	8212	-3	8212	02.05.2014	8212	3

2.2 Results

Frequency of migration

All records 2011-2021:

75% have no migration movement



Note: The population comprises all persons who were registered in Switzerland at least once in the period 2011–2021.

Data as on: 18.10.2022

Source: FSO – Longitudinal demographic statistics (DVS)

Leaving CH after immigration

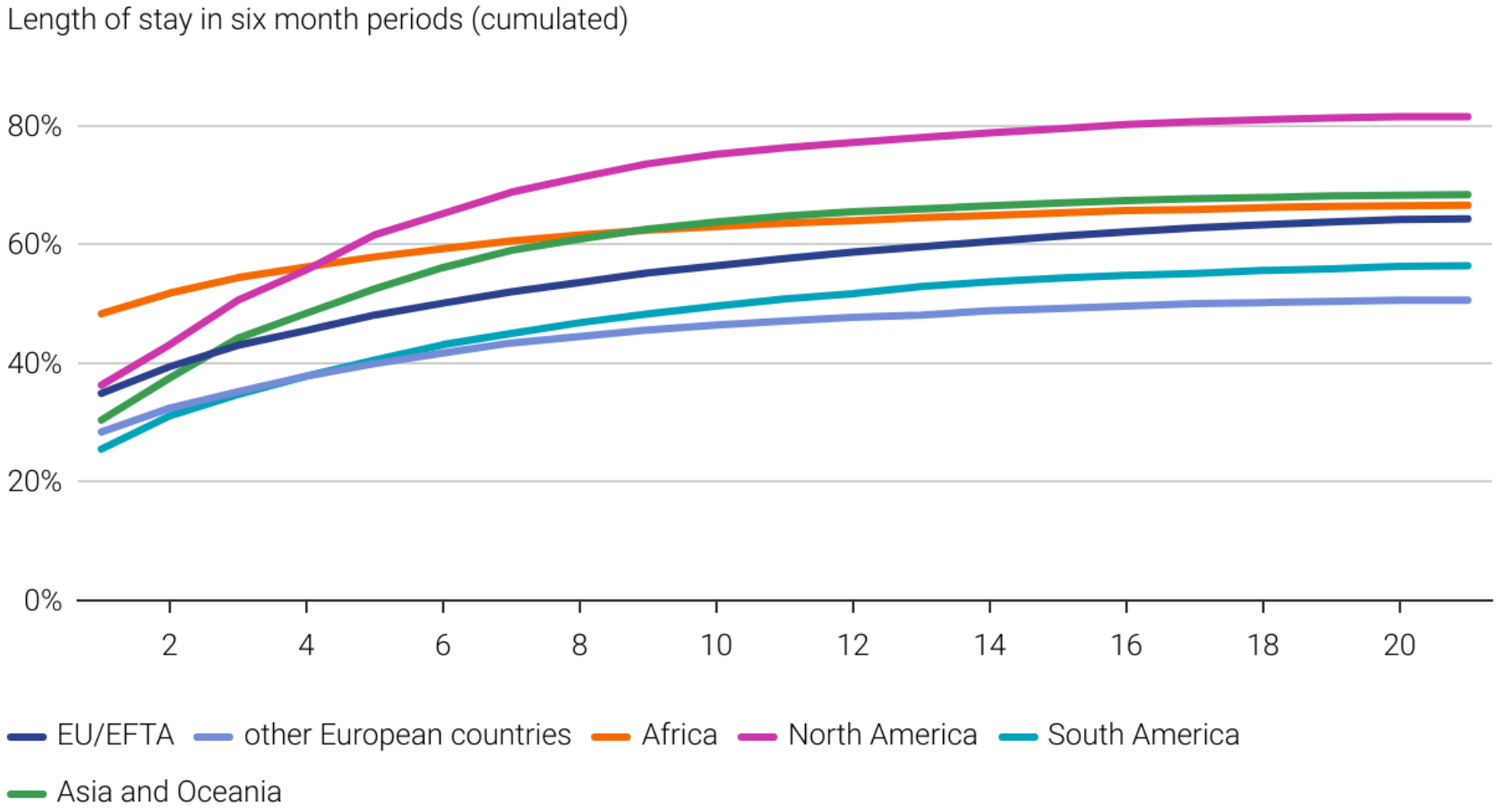
Immigration cohort 2011:

53% left CH until 2021

median length of stay 23.5 months

Emigration rate by length of stay and place of birth

Immigration in 2011, emigration until 2021
Permanent and non-permanent resident population



Note: Persons with place of birth Switzerland and unknown place of birth not taken into account.
Reading aid: In the first six months (01.01.2011 to 30.06.2011) 25,5% of people from South America and 48,3% of people from Africa left Switzerland again.

Source: FSO – Longitudinal demographic statistics (DVS)

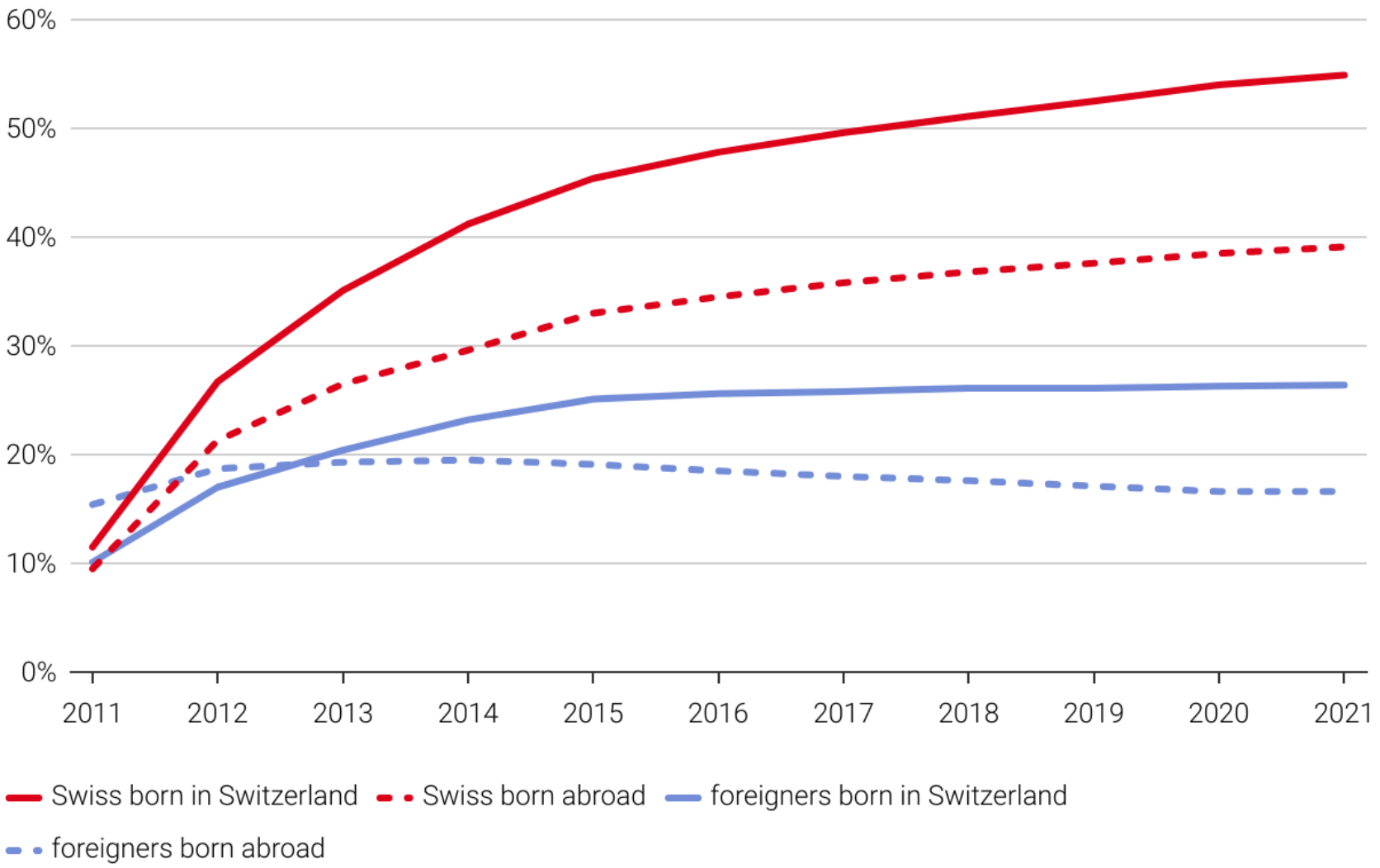
Returning to CH after emigration

Emigration cohort 2011:

23% came back to CH until 2021

Re-entry rate (cumulated value) by place of birth and nationality

Emigration in 2011, return until 2021
Permanent and non-permanent resident population



Source: FSO – Longitudinal demographic statistics (DVS)

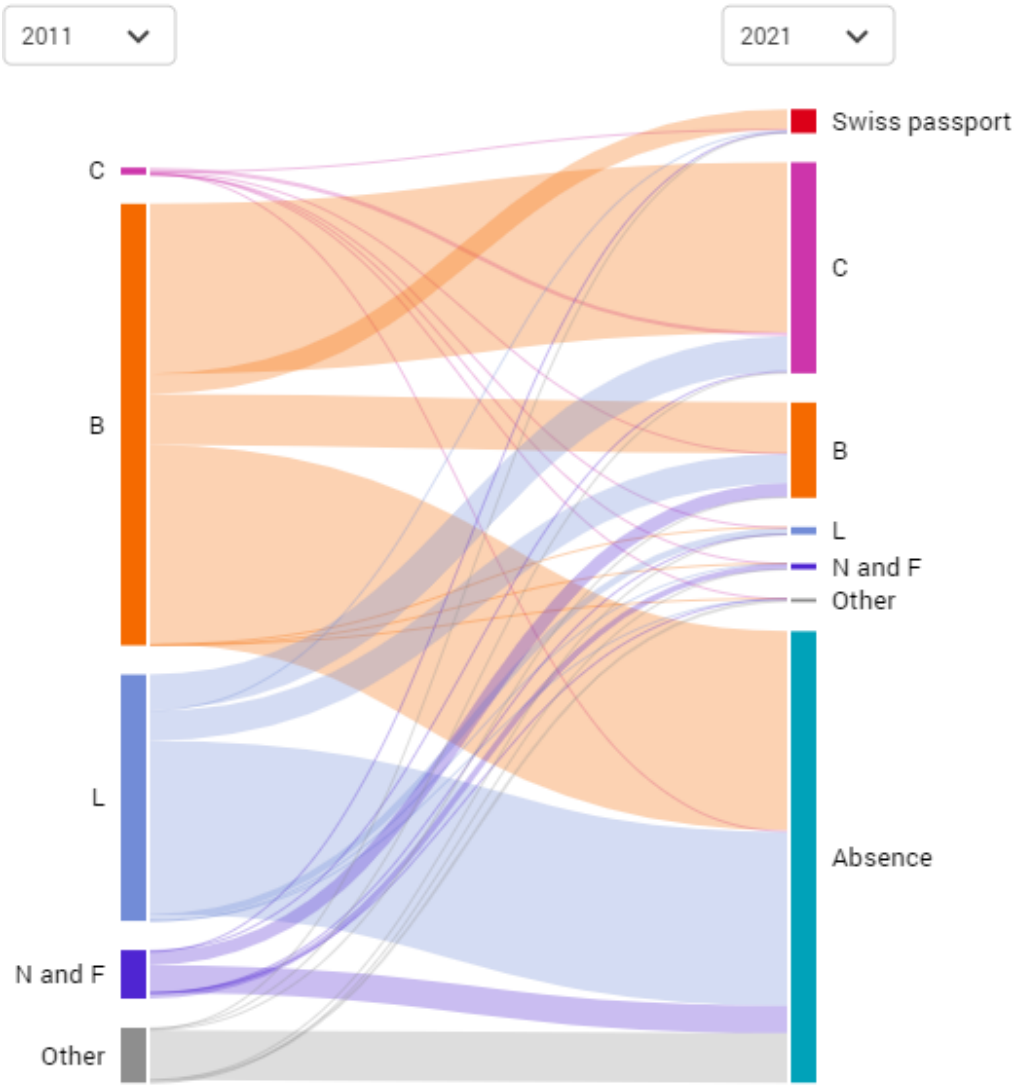
Changes in situation

Immigration cohort (foreigners) 2011:

Different pathways after immigration

Foreign nationals who immigrated to Switzerland by type of permit at time of immigration and situation in subsequent years

Permanent and non-permanent resident population, in percent



Source: FSO – Longitudinal demographic statistics (DVS)

Conclusions: new insights with same data

Longitudinal data is systematizing the approach of flow data
→ film view

Consider the permanent and non permanent population shows:

- Individuals migrating frequently
- Short durations of stay (voluntary / unvoluntary re-emigration)

Dissemination: necessity to precise aims and uses of cross sectional vs. longitudinal data

Thank you very much for your attention!

Questions?