



# Zurich on the move

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Stadt Zürich  
Open Data



## Research Questions

The city of Zurich (416,000 residents) lies at the centre of the Greater Zurich Area (1.8 million). The city is divided into 34 statistical Stadtquartiere (districts), which are grouped into 12 Kreise (boroughs). These districts vary in size from 650 to 32,000 residents.

**What patterns can we uncover for people moving into, out of and within the city of Zurich?**  
**What changes do we observe over time?**

## Our data

Open Data Stadt Zürich provides data on:

- 1) the total population of the city;
- 2) moves into the city;
- 3) moves within the city; and
- 4) moves out of the city.

The following features are shared by the above data sets:

**Year of move:** 1993 - 2016

**Age group:** 10-year groups

**Gender:** female/male

**Marital Status:** single, married, divorced, widowed

**Origin and destination** of the move (for foreigners by country)

The combined data contains 1.6 million data points. We cleaned the data and translated the relevant features of the data from German to English.

We started with an analysis of the summary statistics for each feature before focusing on specific subsets of the data across multiple features. We looked for patterns and changes.

## General Observations

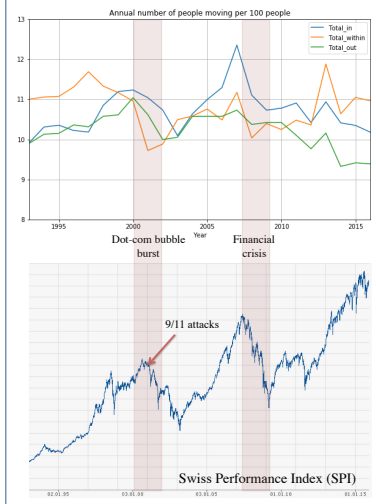
Zurich has grown by 55,000 people in the 23 years on record. But most of that happened in the last 10 years.

Year	1993	2005	2016
Total population	360898	366809	415682
Move to	35797	40330	42318
Move away	35738	38789	39038
Moving within	39716	39462	45571

FYI: The rise in population since 2005 is mostly due to higher birth rate, not net migration from outside the city.

**In times of uncertainty people stay where they are, while in times of prosperity the rates of moves increase:**

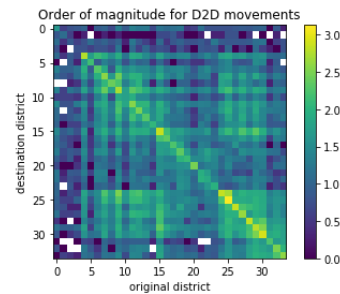
We observe that the likelihood of people moving to, within and away from Zurich tracks the status of the economy (presented by the Zurich Performance Index below)



## A selection of more detailed observations

### Moves from district to district (D2D)

The diagram below shows the moves between districts in 2016 on a log scale. The diagonal line highlights that independent of the district size or location, often the **majority of moves stays within the same district**.



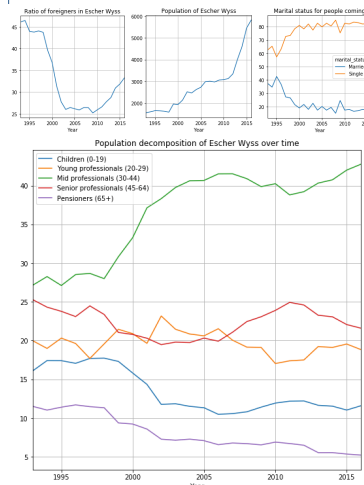
### Foreigners

In the late 90s the separation between foreigners and Swiss people was more distinct. Foreigners made up 40-50 % of the districts in Kreis 4 and 5, while they only represented 15-25 % in all other districts. **Over time the distribution of foreigners has homogenized.** They now represent around 30% of most districts and come from 165 different nations. The largest groups of foreign nationals are Germans (33,500), Italians (14,500) and Portuguese (8,300).

### Women

In 1993, 53% were women. Today men and women have a 50% share each and most districts have followed that trend. But when it comes to moving places (in/within/out) **women are less likely to move.** They only form 46-47% of any of the three data sets.

### What happened in Escher Wyss (twice)?



Escher Wyss was redeveloped in two phases in the 90s and late 00s, adding new living space and offices for tech-oriented companies. The population doubled each time, but in different ways. The increase from 1998 to 2006 was mostly driven by Swiss nationals, single between 30 and 44 years old\*. In contrast, the second phase was more heterogeneous in terms of age and nationalities. Nevertheless, Escher Wyss still does not appear very attractive to families and couples.

\* The total number of foreigners, children (families) and pensioners had not changed in that time, i.e. they were not driven out.

## Storyline

**It is 1993, Ada is 18 and she moves to Zurich.**

**Where will Ada live and when will she decide to move?**

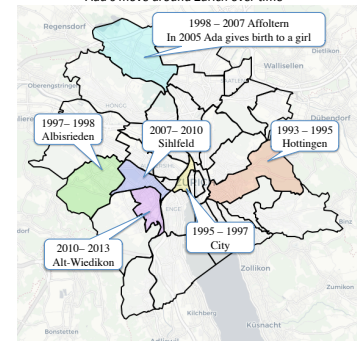
We model Ada's storyline by generating a probabilistic path through Zurich. Over time Ada's priorities in life will change and so will her choices of where to live.

We specify the following life plan parameters:

1. When will Ada get married? **at age 26**
2. When will she start a family? **at age 30**
3. What is the minimum time she intends to live in the city of Zurich? **for 13 years\***

More generally we can track year, age, gender, marital status and district. Note, we model families through the children.

*Ada's move around Zurich over time*



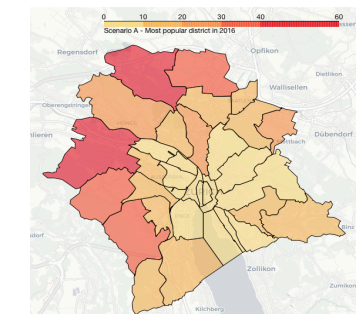
*In 2013 Ada left Zurich.*

\* Otherwise Ada would only stay a few years and leave in 92% of storylines.

## I must have moved a thousand times

We run Ada's storyline 1000 times and plot the distribution of the final district in 2016.

**Stats: move away 526, Affoltern 57, Altstetten 55, Seebach 37**



Let's compare this to a married couple moving to Zurich in 1993, having a baby in 1994 and willing to stay for at least 10 years.

**Stats: move away 507, Seebach 44, Affoltern 43, Altstetten 41**

