

Transitions Out Of Unemployment: A Competing Risks Model To Study Gender, Salary And Nationality Disparities In Austria

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Introduction

Labor market dynamics in the face of automation and crises increase the importance of studying pathways out of unemployment;

Our goal is to examine **gender and nationality differences** that are often obscured by aggregated labour market statistics.

Theory

What is a **Competing Risks Model**?

Cause-Specific Hazard Model

It provides us with information regarding the instantaneous hazard rate of our event of interest occurring knowing that **no event has happened thus far**

Subdistribution Hazard Model

The instantaneous hazard rate for a determined type of event for individuals who have not yet experienced that event (but may have experienced **a competing one**)

Theory

Fine & Gray (1999) present the **cause-specific and subdistribution hazard models** to study treatment effect (tamoxifen) on breast cancer recurrence;

In economics: Katz & Meyer (1990) use a competing risks model to study how the possibility of **exit unemployment into the previous employer** shapes the duration of unemployment spells;

Subdistribution models are **underused in economics** (Card et al. (2007a), Arranz et al. (2010)) or used in **connection to health issues** (Reeuwijk et al. (2017)).

Our Objective

Latouche et al. (2013) and Austin et al. (2016) draw attention to the fact that these two models should be presented side by side as **a more rigorous scientific approach** and to also better understand the effect of each covariate;

We pretend to borrow this **good practice** from the medical literature to analyse **gender, nationality and income differences** in the Austrian unemployment market.

Data

Subsidised Employment	Non-Subsidized Employment	Out of Labor Force	Self-Employed	People Remaining Unemployed
9,660 (2.21%)	325,044 (74.46%)	70,404 (16.13%)	8,652 (1.98%)	22,752 (5.21%)

Arbeitsmarktdatenbank Dataset (AMDB) – 436,512 observations

4 types of exit from unemployment

Division of these five groups according to spell length (0-140 days, 140-210 days, more than 210 days), gender (male, female), age (20-35 years, 36-55 years, 56-70 years) and nace (primary sector, secondary sector, tertiary sector)

Results

Variable	<u>CSH</u>	<u>SH</u>
	Non-subsidised Dependent Employment	Non-subsidised Dependent Employment
Age	-0.002*** (0.000)	-0.005*** (0.000)
Male	0.442*** (0.004)	0.404*** (0.004)
Austrian	-0.194*** (0.004)	-0.184*** (0.004)
Log of Pre- Unemployment Salary	0.284*** (0.002)	0.266*** (0.002)
Sample Size		
Log Likelihood	-3 711 991.9	-3 751 758.3

Standard errors are shown in parentheses. The set of controls is comprised of new company size, region and economic sector of previous occupation * p<0.1, ** p<0.05, *** p<0.01.

Being male increases the exit rate towards non-subsidised jobs (CSH: 0.442). This result remains strong in the sub-distribution hazard model as well (SH: 0.404), potentially showcasing labour market preferences that favor men for traditional full-time jobs. Austrians are less likely to exit unemployment through non-subsidised employment. Native workers having less pressure and possibly higher employment opportunities, compared to non-Austrians

Results

	<u>CSH</u>	<u>SH</u>
	Subsidised	Subsidised
	Dependent	Dependent
Variable	Employment	Employment
Age	0.067*** (0.001)	0.076*** (0.007)
Male	-0.154*** (0.022)	-0.627*** (0.027)
Austrian	0.212*** (0.025)	0.521*** (0.035)
Log of Pre- Unemployment Salary	0.031*** (0.010)	-0.222*** (0.015)
Sample Size	416 904	416 904
Log Likelihood	-95 055.608	-109 666.55

Older individuals tend to have more experience and/or programme eligibility, driving transitions towards subsidised employment robustly.

The idea of subsidised employment is geared towards women, due to policy design or social norms.

Austrians are significantly more likely to transition into subsidised employment, potentially reflecting the stronger eligibility of Austrians for government or social welfare programs.

Standard errors are shown in parentheses. The set of controls is comprised of new company size, region and economic sector of previous occupation * p<0.1, ** p<0.05, *** p<0.01.

Results

Variable	<u>CSH</u>	<u>SH</u>
	Self-Employment	Self-Employment
Age	0.002 (0.001)	0.004*** (0.001)
Male	0.403*** (0.023)	0.142*** (0.024)
Austrian	0.315*** (0.027)	0.488*** (0.026)
Log of Pre-Unemployment Salary	0.149*** (0.011)	- 0.042*** (0.013)
Sample Size		
Log Likelihood	-82 238.372	-92 150.838

Standard errors are shown in parentheses. The set of controls is comprised of new company size, region and economic sector of previous occupation

* p<0.1, ** p<0.05, *** p<0.01.

Pre-unemployment salary **increases the CSH** of exiting unemployment through becoming self-employed but, at the same time, it has the **opposing effect on the incidence** of the same event

Occupation	Mean Salary (in €)
All	1891
Forestry-related	1653
Specialised Construction Works	1399
Wholesale Trade	2145
Manufacture of Fabricated Metal Products	2752
Catering	1398
Other Personal Activities	1403

The **opportunity cost** of these occupations is high!

Results

Variable	<u>CSH</u> Out of Labour Force	<u>SH</u> Out of Labour Force
Age	0.002*** (0.000)	0.004*** (0.000)
Male	0.249*** (0.008)	0.124*** (0.008)
Austrian	-0.187*** (0.008)	-0.107*** (0.007)
Log of Pre- Unemployment Salary	0.075*** (0.004)	0.012*** (0.004)
Sample Size		
Log Likelihood	-686 459.66	-686 459.66

Males are more likely to exit the labor force completely, potentially due to health restrictions, old age, or discouragement.

Austrians have more social benefits, employment opportunities or the ability to remain active in the labour market for longer compared to non-Austrians.

Standard errors are shown in parentheses. The set of controls is comprised of new company size, region and economic sector of previous occupation * p<0.1, ** p<0.05, *** p<0.01.

Results

We now propose to analyse **gender and nationality differences among high earners** in exits from unemployment into non-subsidised dependent employment;

High-earner: someone whose previous salary is at least in the 75th percentile of the salary distribution in our sample (i.e. at least 2426 euros);

We present the estimates for both the CSH and SH models where the **base category** for the interaction between the dummies of nationality, gender and high-earner is a **high-earning Austrian male**. We also plot the **CIF** for each group.

Results

Variable	Cause-Specific Hazard	Subdistribution Hazard
Age	-0.002*** (0.000)	-0.005*** (0.000)
High-Earning Austrian Female	-0.539*** (0.022)	-0.468*** (0.010)
High-Earning Foreign Male	0.189*** (0.009)	0.174*** (0.011)
High-Earning Foreign Female	-0.549*** (0.022)	-0.479*** (0.020)
Lower-Earning Austrian Male	0.130*** (0.006)	0.105*** (0.007)
Lower-Earning Austrian Female	-0.191*** (0.007)	-0.200*** (0.008)
Lower-Earning Foreign Male	0.386*** (0.007)	0.348*** (0.007)
Lower-Earning Foreign Female	-0.212*** (0.009)	-0.198*** (0.009)
Log of Pre- Unemployment Salary	0.352*** (0.003)	0.320*** (0.003)
Sample Size	416 904	
Log Likelihood	-3 710 739.3	-3 750 906.4

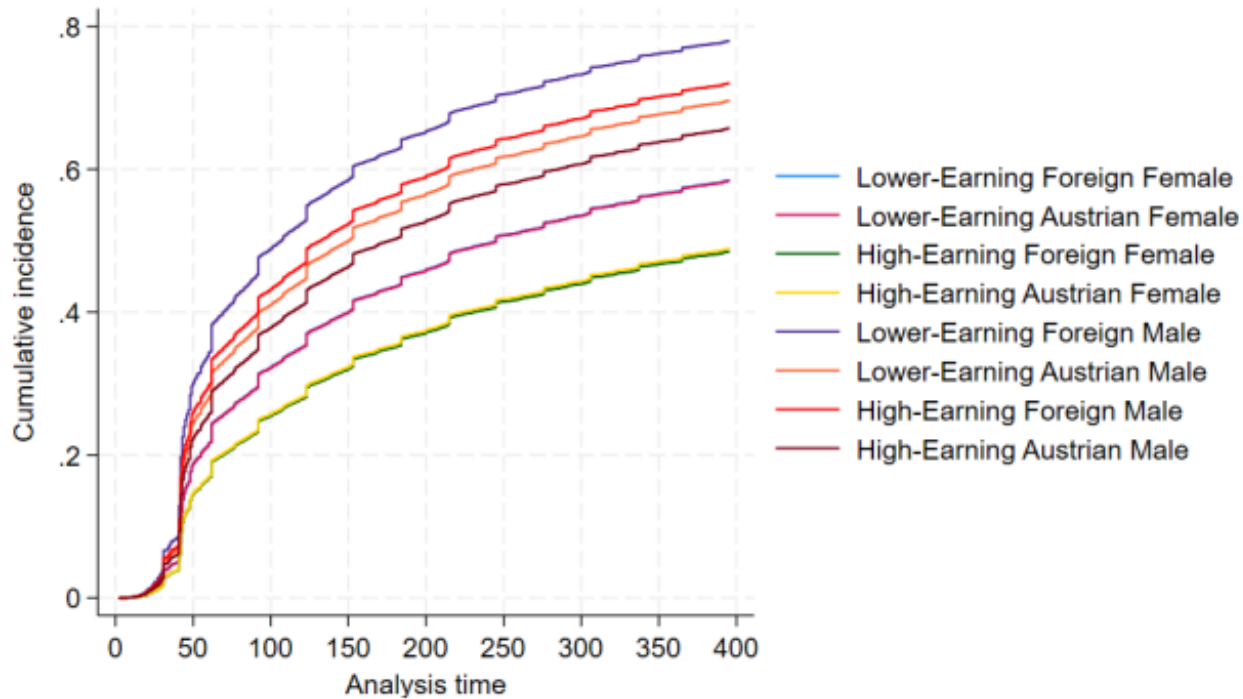
Standard errors are shown in parentheses. The set of controls is comprised of new company size, region and economic sector. * p<0.1, ** p<0.05, *** p<0.01.

Among the Austrian high-earners, **being a woman is associated with a decreased hazard** of getting (non-subsidised) employment; this negative effect is even **further aggravated for foreign women;**

Even among the high-earner group **(male) emigrants have an increased** chance of finding employment;

The negative weight of being a woman overshadows the positive weight of being a foreigner.

Results



Cumulative Incidence of Getting a Non-Subsidised Dependent Employment

Being of **foreign nationality and lower-earner** implies increased hazards in getting an occupation; additionally, we notice that (the male) **gender** strongly accelerates this exit;

Among women, **lower-earning individuals** have a higher hazard compared to their counterparts but (foreign) nationality **does not seem to play a positive role**, unlike in the male case.

Conclusion

Foreigners exit unemployment faster towards non-subsidized dependent employment, and so do males compared to their counterparts;

However, being a woman overshadows the benefit of being a foreigner;

Lower-earners get employment faster than high earners;

Considering alternative routes out of unemployment, higher pre-unemployment salaries are associated with lower hazard out of unemployment through getting an independent occupation.

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