First question:
How is the labor market outcome of the second-generation immigrants related to the first generation?

Three dimensions of intergenerational mobility among immigrants:

1. Immigrants as a group v/s natives.
2. Between groups of immigrants with different national origin.
3. Within immigrant group individual intergenerational earnings mobility.

Second question:
Why do certain groups do better than others in the second generation?

Relates to the third dimension: Do groups who have preferences to transmit human capital or skills between generations to a greater extent do better on the labor market? (Prediction from the Becker-Tomes model)

Table 2. Description of how the data has been designed.

	Explanation
First generation immigrant	All first generation immigrants gainfully employed or self-employed in Sweden 1970
Native "twins"	Native born individuals with the same age, gender, county of residence and occupational status as their foreign born counterparts by the year 1970
Second generation immigrant	Children of foreign born fathers
Native comparison group	Children with both parents born in Sweden
Birth year for foreign born fathers and native "twins"	1911-1955
Birth year for second generation immigrants and native comparison groups	1935-1977
Fathers earnings observed	1975, 1980
Second generation immigrants earnings and social assistance dependency observed	1997, 1998, 1999
Earnings definition	All fathers with positive earnings in 1975 and 1980 All sons with positive earnings in 1997, 1998 and 1999

Table 3. Number of individuals in different groups of second-generation immigrants.

	Father's region of birth	Number of male second generation immigrants	Share of second generation immigrants with a native born mother (percent)	Number of children of native "twins"
1	Finland	25,674	35.8	19,477
2	Other Nordic countries	14,614	70.3	10,865
3	Former Yugoslavia	4,262	28.7	3,369
4	Greece	1,029	29.5	785
5	Italy	1,389	65.2	1,160
6	Turkey	408	32.3	310
7	Baltic States	4,327	51.6	3,213
8	Former Soviet Union	1,393	36.7	963
9	Czechoslovakia	1,058	40.8	930
10	Hungary	2,515	49.5	2,064
11	Poland	1,484	45.1	1,137
12	Germany	7,383	64.5	5,828
13	France	357	79.0	287
14	United Kingdom	592	81.3	501
15	The Netherlands	754	67.0	528
16	Middle East	255	56.1	160
17	Africa	470	66.8	291
18	Asia	456	74.3	326
19	Latin America	246	74.0	176
20	United States and Canada	1,832	89.7	1,360

	Father's region of birth	Number of male second generation immigrants	Share of second generation immigrants with a native born mother (percent)	Number of children of native "twins"
1	Nordic countries	40,288	48.3	30,342
2	Southern Europe and Turkey	7,088	36.2	5,624
3	Eastern Europe	10,777	47.2	8,307
4	Western Europe, US and Canada	10,918	70.3	8,504
5	Africa and Middle East	725	63.0	451
6	Latin America and Asia	702	74.2	502

Table 1. Composition of immigrants to Sweden and Swedish immigration and refugee policy 1930-1970.

Point of time:	**Immigration and refugee policy**	**Type of immigration**	**Major source countries**
1910-1940	Restrictive policy against immigrants and refugees from 1917 and ahead	Return migration from North America and immigrants from the Nordic countries	Nordic countries. Return migrants from North America
1940's	Less restrictive refugee policy due to Second World War	Refugee immigration due to the second world war	Nordic countries and countries in Eastern Europe
1950's	The common Nordic labor market 1954 Collective labor force conveyance with recruitment campaigns The 1953 Work regulation of the OEEC which gave non-Nordic immigrants right to enter Sweden individually and then apply for a work permit and the Alien Act of 1953 which gave foreigners resident in Sweden legal protection and security in the country. The Geneva convention of 1951 regarding different classifications of refugees.	Low educated labor force migration High educated labor force migration Refugee migration	Finland, other Nordic countries, Italy, Greece Western Europe Hungary
1960's	Restriction that non-Nordic immigrants must arrange for visas, employment and residence before entering Sweden.	Low educated labor force migration Refugee migration	Finland, other Nordic countries, Yugoslavia Czechoslovakia

No.	Father's region of birth	Differences in log earnings between male immigrants and native "twins" .	Differences in log earnings between male immigrants and all natives.	Differences in log earnings between male second generation immigrants and native their "twins"	Differences in log earnings between male second generation immigrants and all natives	Differences in use of social assistance between male second generation immigrants and their native "twins"	Differences in use of social assistance between male second generation immigrants and all natives
1	Finland	-0.032	-0.029	0.012	0.004	0.020	0.025
2	Nordic countries	-0.050	-0.082	0.038	0.026	0.017	0.016
3	Former Yugoslavia	-0.092	-0.105	-0.175	-0.184	0.041	0.032
4	Greece	-0.149	-0.223	-0.399	-0.377	0.048	0.037
5	Italy	-0.049	-0.067	-0.024	-0.063	0.021	0.017
6	Turkey	-0.262	-0.248	-0.232	-0.305	0.064	0.054
7	Baltic States	-0.014	0.021	0.138	0.153	-0.001	-0.013
8	Soviet Union	-0.015	-0.120	0.048	0.061	0.001	0.009
9	Czechoslovakia	-0.063	0.002	0.038	0.047	-0.010	-0.013
10	Hungary	-0.090	-0.062	-0.071	-0.065	0.032	0.019
11	Poland	-0.184	-0.188	0.087	0.031	0.002	0.009
12	Germany	-0.005	0.002	0.079	0.087	-0.005	-0.009
13	France	-0.205	-0.152	-0.103	-0.096	0.024	0.011
14	United Kingdom	-0.077	-0.006	-0.111	-0.103	0.025	0.021
15	The Netherlands	-0.063	-0.048	0.063	0.123	-0.002	-0.002
16	The Middle East	-0.276	-0.200	-0.251	-0.295	0.073	0.055
17	North Africa	-0.284	-0.193	-0.225	-0.359	0.088	0.053
18	Asia	-0.090	0.002	-0.019	-0.024	0.005	-0.007
19	Latin America	-0.141	-0.094	0.238	0.086	-0.003	-0.009
20	United States and Canada	-0.041	-0.092	0.047	0.060	-0.012	-0.022
Average difference			-0.050		0.016		0.017

No.	Father's region of birth	Differences in log earnings between male immigrants and native "twins" .	Differences in log earnings between male immigrants and all natives.	Differences in log earnings between male second generation immigrants and native their "twins"	Differences in log earnings between male second generation immigrants and all natives	Differences in use of social assistance between male second generation immigrants and their native "twins"	Differences in use of social assistance between male second generation immigrants and all natives
1	Nordic countries	-0.038	-0.047	0.022	0.014	0.021	0.022
2	Southern Europe and Turkey	-0.103	-0.123	-0.160	-0.182	0.037	0.033
3	Eastern Europe	-0.065	-0.047	0.060	0.060	0.008	0.002
4	Western Europe, US and Canada	-0.026	-0.001	0.059	0.069	-0.003	-0.007
5	Africa and Middle East	-0.280	-0.196	-0.236	-0.342	0.085	0.054
6	Latin America and Asia	-0.108	-0.020	0.078	0.015	0.002	-0.007
Average difference			-0.050		0.016		0.017

Table 6. Estimates of within immigrant or native comparison group intergenerational earnings mobility. (Standard errors within parentheses).

Geographic origin	Regression estimates. 2nd generation immigrants.	Regression estimates. Native comparison group.	Rank	Correlation coefficient. 2nd generation immigrants.	Rank
1. Finland	0.183	0.124	12	0.1036	13
	(0.009)	(0.008)		(0.0033)	
2. Other Nordic Countries	0.209	0.131	7	0.1384	6
	(0.0112)	(0.010)		(0.0043)	
3. Former Yugoslavia	0.180	0.124	13	0.0913	15
	(0.025)	(0.019)		(0.0088)	
4. Greece	0.170	0.182	14	0.1060	12
	(0.040)	(0.042)		(0.0177)	
5. Italy	0.123	0.097	16	0.0686	18
	(0.043)	(0.041)		(0.0140)	
6. Turkey	0.100	0.082	19	0.0472	19
	(0.074)	(0.044)		(0.0315)	
7. Baltic States	0.248	0.157	4	0.1576	4
	(0.023)	(0.018)		(0.0091)	
8. Former Soviet Union	0.163	0.016	15	0.0893	16
	(0.045)	(0.037)		(0.0156)	
9. Czechoslovakia	0.184	0.238	11	0.1151	11
	(0.043)	(0.032)		(0.0171)	
10. Hungary	0.247	0.170	5	0.1500	5
	(0.028)	(0.023)		(0.0108)	
11. Poland	0.189	0.149	10	0.1197	10
	(0.046)	(0.031)		(0.0165)	
12. Germany	0.201	0.149	8	0.1347	8
	(0.016)	(0.013)		(0.0067)	
13. France	0.272	0.116	1	0.2010	1
	(0.064)	(0.056)		(0.0285)	
14. United Kingdom	0.110	0.077	18	0.0709	17
	(0.051)	(0.039)		(0.0228)	
15. The Netherlands	0.223	0.158	6	0.1351	7
	(0.053)	(0.037)		(0.0190)	
16. The Middle East	0.064	0.217	20	0.0376	20
	(0.073)	(0.075)		(0.0394)	
17. North Africa	0.121	0.192	17	0.0917	14
	(0.061)	(0.053)		(0.0269)	
18. Asia	0.201	0.174	8	0.1304	9
	(0.064)	(0.052)		(0.0248)	
19. Latin America	0.251	0.083	3	0.1890	2
	(0.086)	(0.082)		(0.0387)	
20. United States and Canada	0.254	0.183	2	0.1878	3
	(0.031)	(0.027)		(0.0136)	

All Swedes	0.140	0.0896
	(0.004)	(0.0022)
All immigrants	0.207	0.1290
	(0.005)	(0.0020)

Table 6 (continued). Estimates of within pooled immigrant or native comparison group intergenerational earnings mobility. (Standard errors within parentheses).

Geographic origin	Regression estimates. 2nd generation immigrants.	Regression estimates. Native comparison group.	Rank	Correlation coefficient. 2nd generation immigrants.	Rank
1. Nordic Countries	0.1923 (0.0071)	0.1276 (0.0061)	4	0.1161 (0.0026)	4
2. Southern Europe and Turkey	0.1459 (0.0284)	0.1238 (0.0256)	5	0.0846 (0.0118)	5
3. Eastern Europe	0.2262 (0.0123)	0.1579 (0.0097)	1	0.1375 (0.0045)	3
4. Western Europe, US and Canada	0.2091 (0.0128)	0.1504 (0.0104)	3	0.1426 (0.0055)	2
5. Africa and Middle East	0.0864 (0.0464)	0.1928 (0.0443)	6	0.0644 (0.0239)	6
6. Latin America and Asia	0.2215 (0.0514)	0.1442 (0.0445)	2	0.1535 (0.0219)	1
All Swedes	0.140 (0.004)			0.0896 (0.0022)	
All immigrants	0.207 (0.005)			0.1290 (0.0020)	

Measuring intergenerational earnings mobility

$y_{fit} = y_{fi} + v_{itf}$ and $y_{sit} = y_{si} + v_{sit}$,

$p\lim \hat{\rho} = \rho\sigma_y^2 / \left(\sigma_y^2 + \sigma_{vf}^2\right) < \rho$.

$p\lim R = \rho\sigma_y^2 / \sqrt{\left(\sigma_y^2 + \sigma_{vf}^2\right)\left(\sigma_y^2 + \sigma_{vs}^2\right)} < \rho$.

$$y_{fi} = \beta_{f0} + \beta_{f1} Age_i + \beta_{f2} Age_i^2 + \beta_{f3} Age_i^3 + \beta_{f4} Age_i^4 + u_{fi}$$

$$y_{si} = \beta_{s0} + \beta_{s1} Age_i + \beta_{s2} Age_i^2 + \beta_{s3} Age_i^3 + \beta_{s4} Age_i^4 + u_{si}.$$

$$y_{si} = \rho y_{fi} + f\left(Age_i\right) - \rho g\left(Age_i\right) + \varepsilon_i + u_{is} - \rho u_{if},$$

$$y_{si} = \alpha + \rho_1 y_{fi} + \sum_{k=2}^{6} \beta_k I_k + \sum_{k=2}^{6} \rho_k I_k * y_{fi} + \sum_{j=2}^{5} \gamma_j Q_j * y_{si} + f\left(Age_{fi}\right) + g\left(Age_{si}\right) + u_i ,$$

Table 7. Intergenerational earnings mobility in different earnings levels in the first generation.

Variable	Immigrants		Natives	
	(1)	(2)	(3)	(4)
y_f	0.145	0.133	0.084	0.075
	(0.013)	(0.014)	(0.011)	(0.012)
$Q_2 * y_f$	-0.001	-0.001	-0.000	-0.000
	(0.0005)	(0.0005)	(0.001)	(0.001)
$Q_3 * y_f$	-0.000	0.000	0.000	0.000
	(0.001)	(0.001)	(0.001)	(0.001)
$Q_4 * y_f$	0.001	0.001	0.001	0.001
	(0.001)	(0.001)	(0.001)	(0.0006)
$Q_5 * y_f$	0.005	0.005	0.005	0.005
	(0.001)	(0.001)	(0.001)	(0.001)
$I_2 * y_f$	-	-0.035	-	-0.003
		(0.029)		(0.026)
$I_3 * y_f$	-	0.031	-	0.025
		(0.014)		(0.011)
$I_4 * y_f$	-	0.013	-	0.020
		(0.015)		(0.012)
$I_5 * y_f$	-	-0.095	-	0.055
		(0.046)		(0.045)
$I_6 * y_f$	-	0.028	-	0.009
		(0.052)		(0.044)
Test for joint significance parameters of $I_2 * y_f - .I_6 * y_f$ (p-value)	-	0.028	-	0.196
R^2	0.094	0.099	0.030	0.038
N	267,562		215,996	

Note: The models also include a quadratic function in age of both first and second generations. Equation (2) and (4) also includes a dummy variable for each immigrant group and a full set of interactions with the age of the first and second generations.

Table 8. Determinants of average relative earnings of different groups of second-generation immigrants (t-values within parentheses).

Variable	(1)	(2)	(3)	(4)
Intercept	0.074	-0.110	-0.245	-0.137
	(1.88)	(-1.37)	(-3.63)	(-1.67)
Per capita GDP			0.912	0.167
			(2.80)	(0.68)
Intergenerational		1.373		1.298
Correlation		(2.56)		(2.61)
First generation	1.425	1.190		1.296
Income	(4.47)	(4.05)		(4.00)
R^2	52.6	65.7	39.6	82.3
N	20	20	14	14

Specification (3) and (4) omits former Yugoslavia, the Baltic States, the Soviet Union, Czechoslovakia, Hungary and Poland since per capita GDP was not available for these countries.

Conclusions

1. The second-generation immigrants not only converge in average earnings with the comparison group of natives, but did in fact reverse the 5 percent earnings disadvantage to a 1.6 percent earnings advantage.

2. Between group divergence. Less successful groups, primarily originating from developing countries, become even lose relative to other groups in the second generation.

3. Intergenerational earnings mobility is significantly lower among immigrants compared to natives.

4. Heterogeneity in intergenerational mobility within the different groups of immigrants and those groups of immigrants with low earnings mobility, or a high level of transmission of human capital, have on average higher earnings from labor. This can be interpreted as returns to intergenerational transmission of human capital and support the prediction from the Becker-Tomes model.