Preferred citation style

Axhausen, K.W. and A, Marmolejo (2012) Flat demand for driving? An analysis of the Swiss case 1990 – 2010, Workshop on "Dynamics in Travel Behavior, University of Maryland, College Park, January 2013.

Flat demand for driving? An analysis of the Swiss case 1990 – 2010

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January
2013

Motorways and cars: Switzerland since 1960
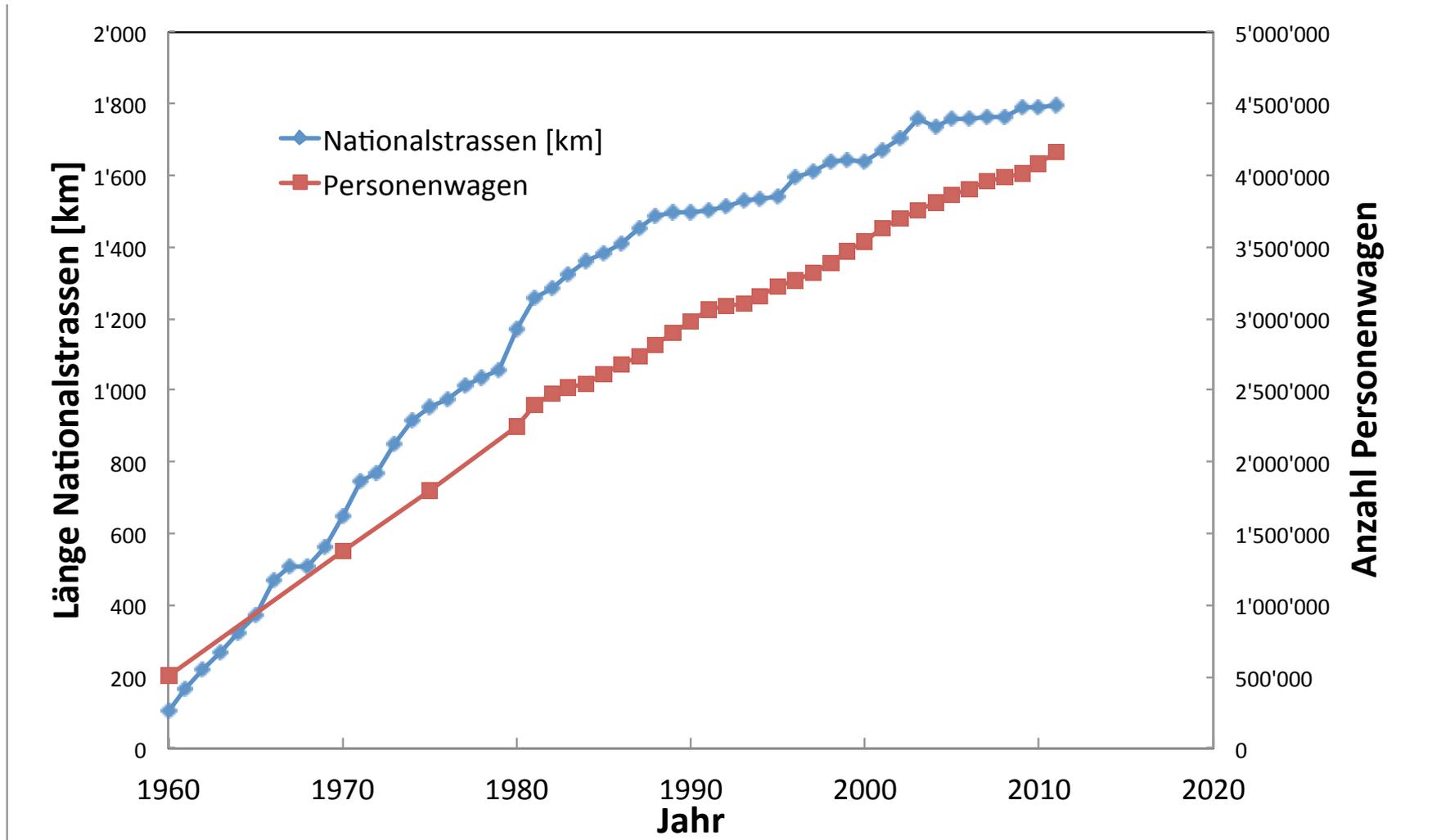
Drivers of traffic growth: BITRE, Report 128
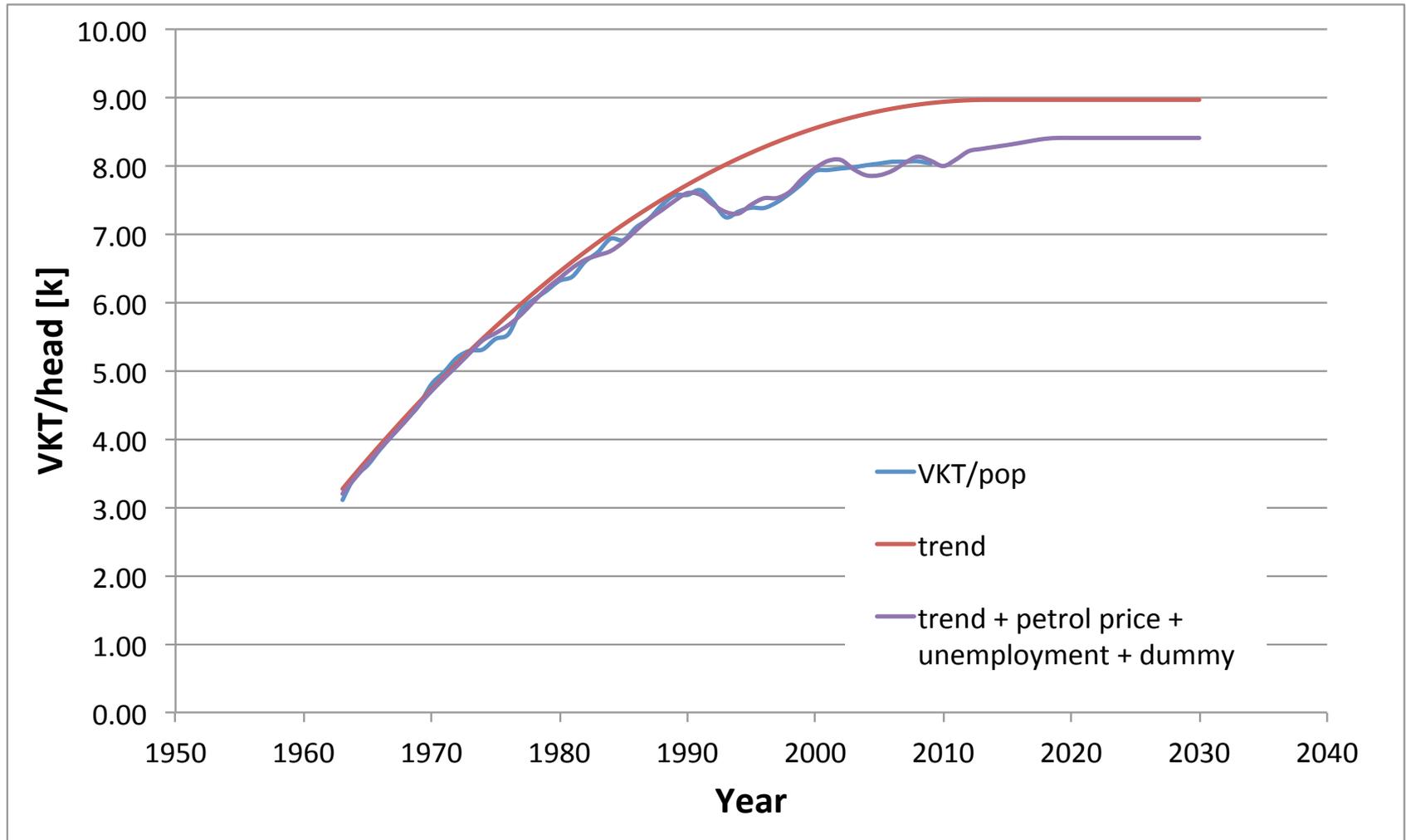
Drivers of traffic growth: BITRE

VKT/Capita   =

-   Constant

+   Year

-          Year^2

-          Petrol price (-1)

-          Unemployment rate (0, -1)

Drivers of traffic growth

VKT = AVKT/Capita * Pop

= AVKT/Car * Cars/Capita * Pop

= AVKT/Car * Cars/Lic * Lic/Capita * Pop

= 365 * Act/Day * Trip/Act * KT/Act * Car%
* Cars/Lic * Lic/Capita * Pop

= 365 * Act(X)/Day *Trip/Act * KT(Car, X, I) * Car%(Car, X, I)
* Cars(X) / Lic * Lic(X, I) / Capita * Pop(I, Y)

# Population development: Switzerland (BITRE)
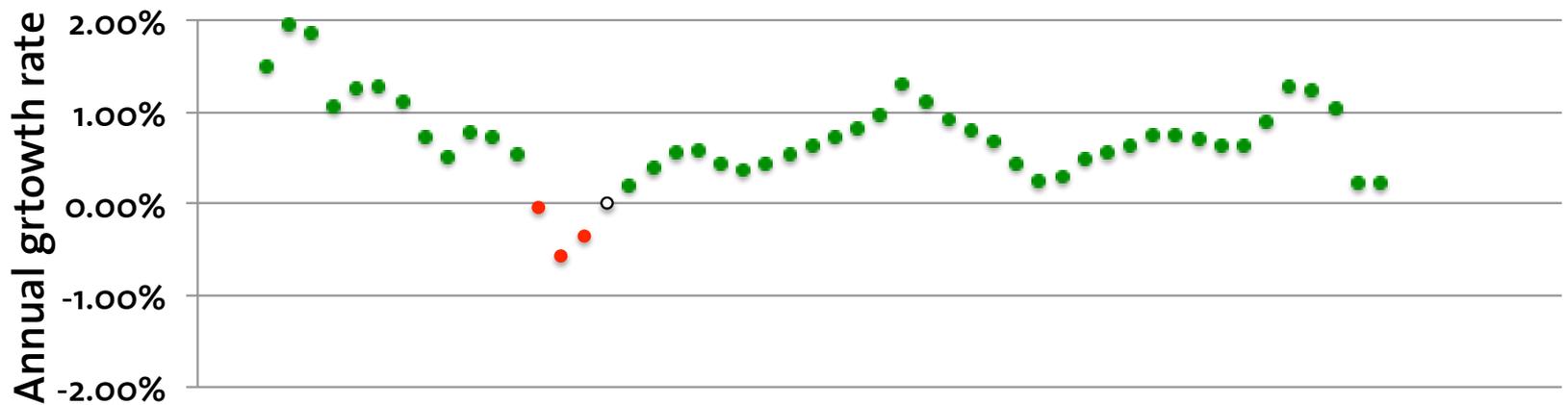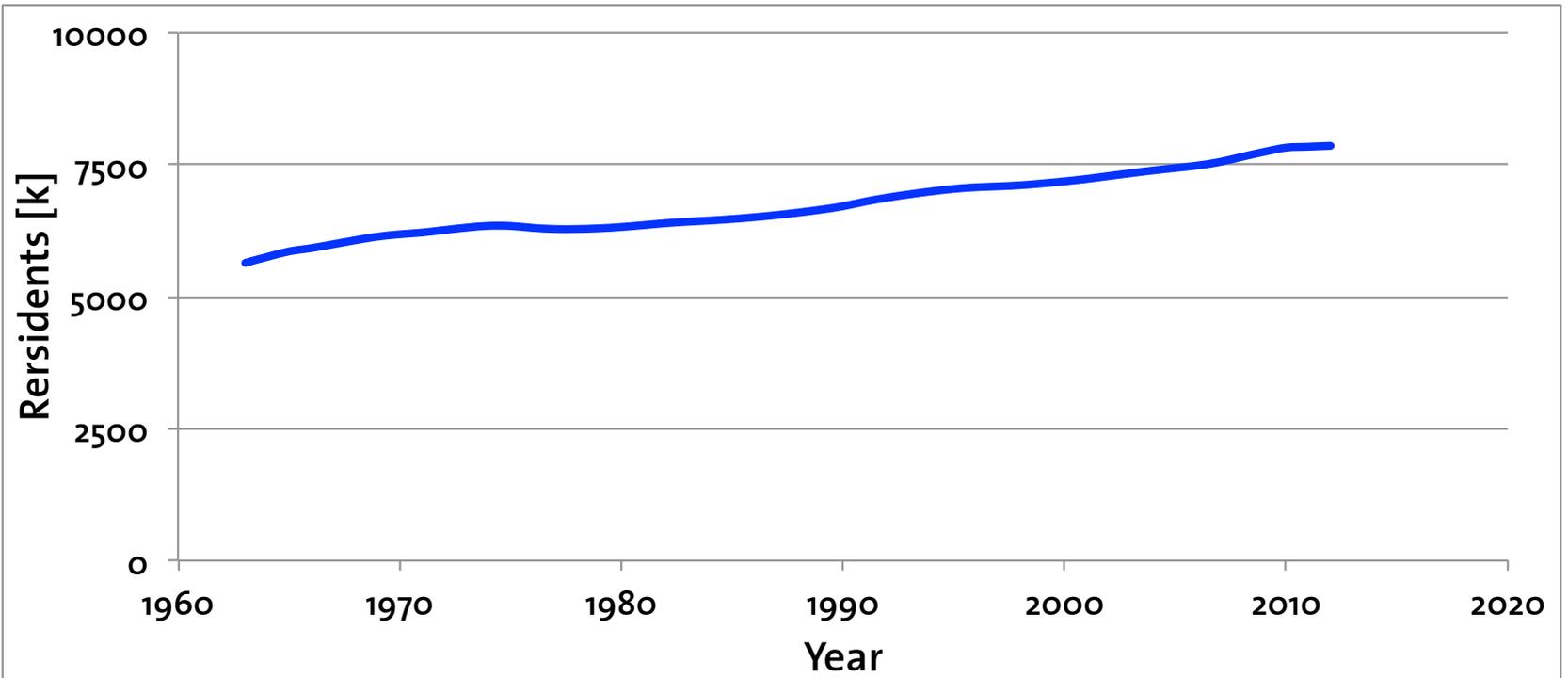
# Population share of the age cohorts
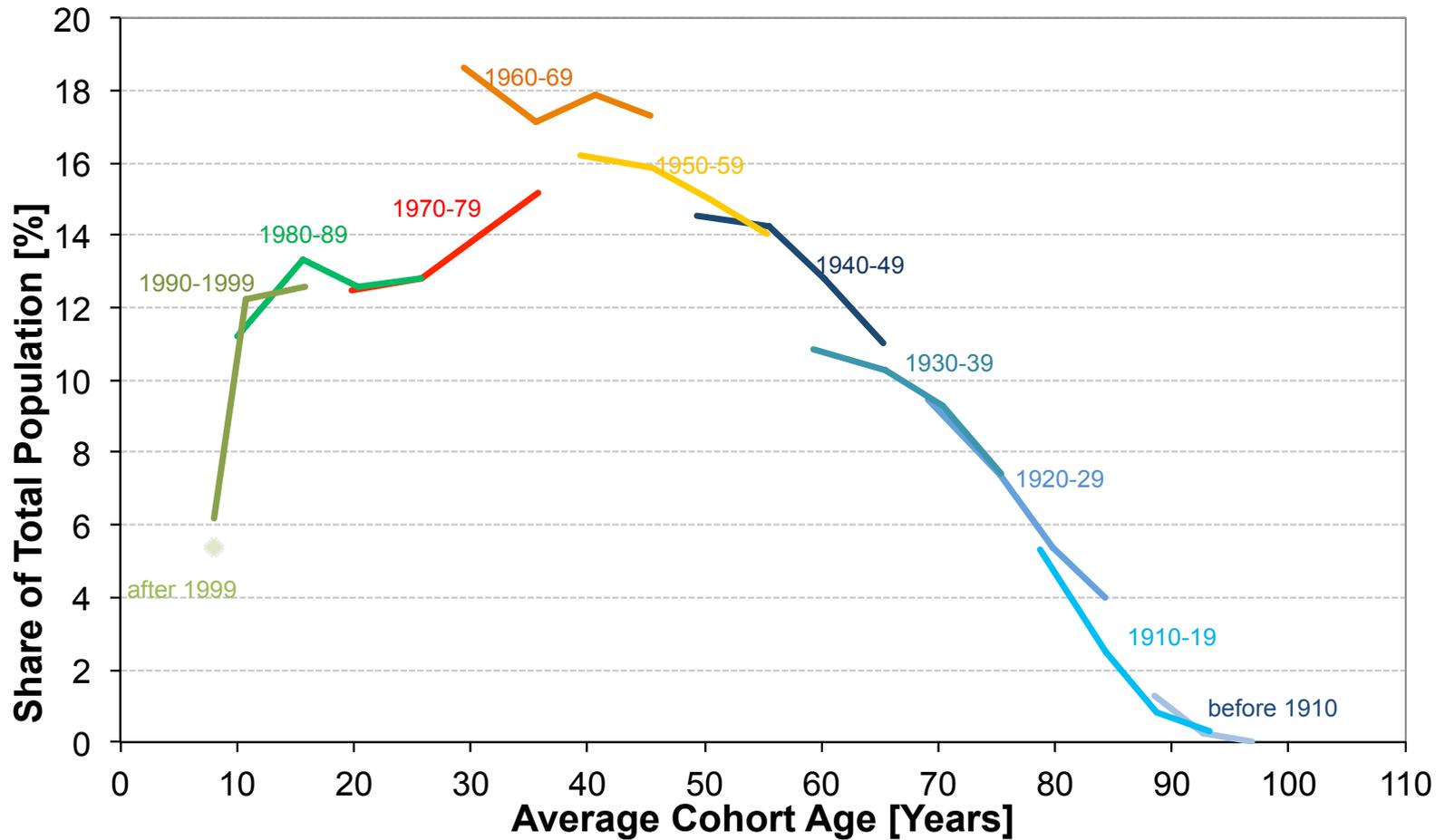
Driving licences

# Driving licence holding by gender
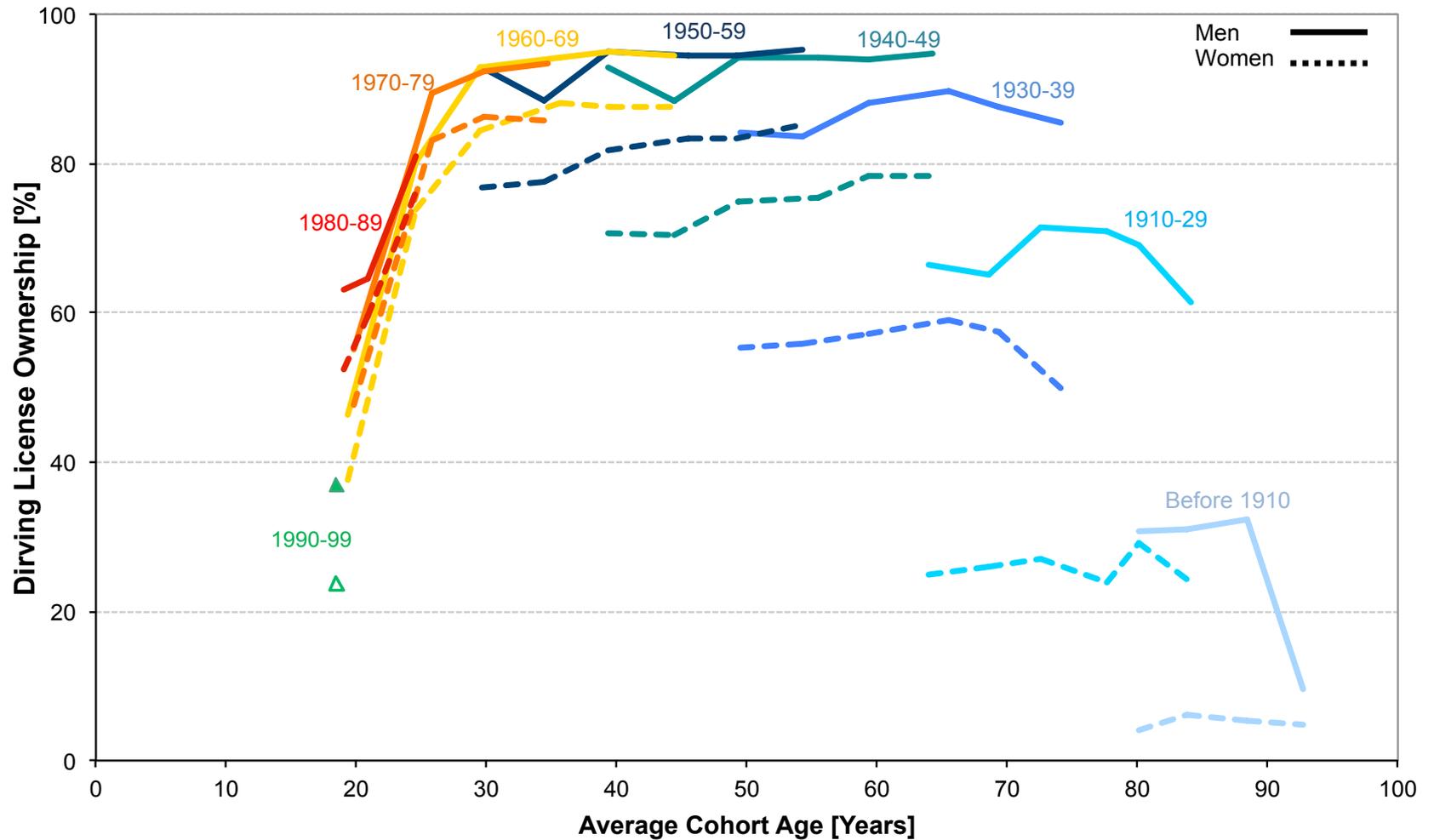
Driving licence holding by gender (5 year cohorts)
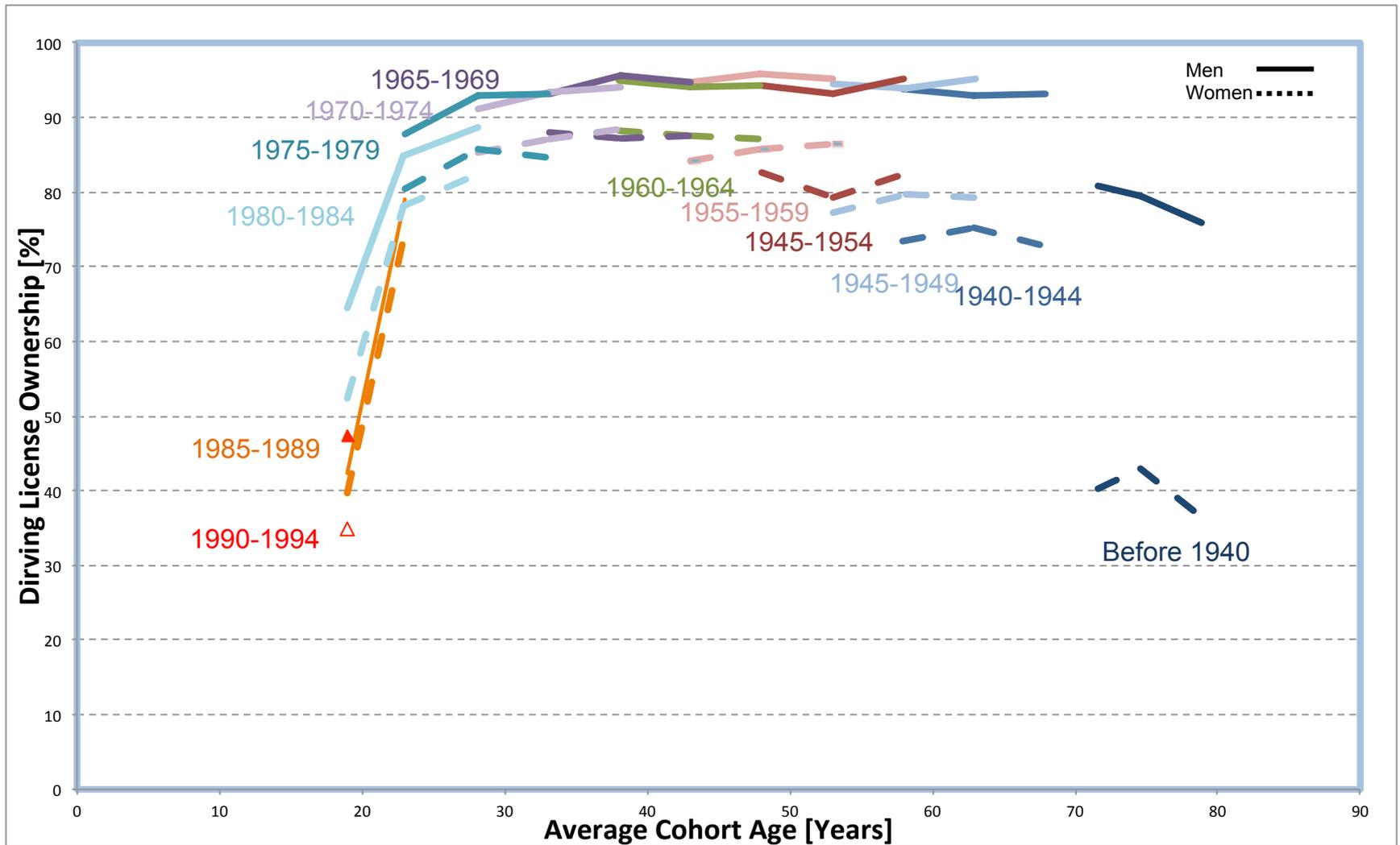
Driving licence holding by location (5 year cohorts)
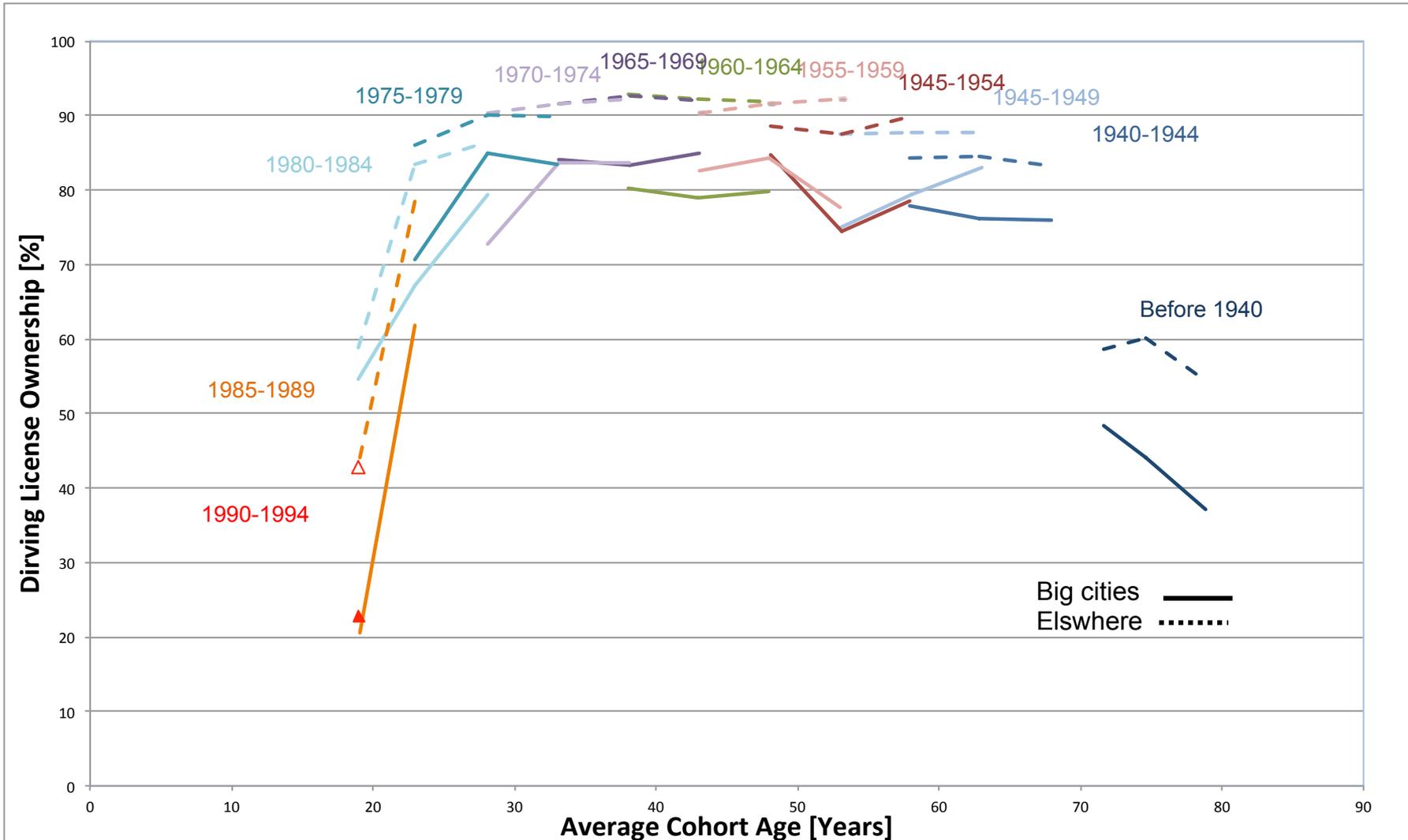
Licence holders and car availability (2010)

Licence holders [%]

Cars per licence holders[%]

■ Men
□ Women

65-
45-64
25-44
18-24

100 75 50 25 0   0 25 50 75
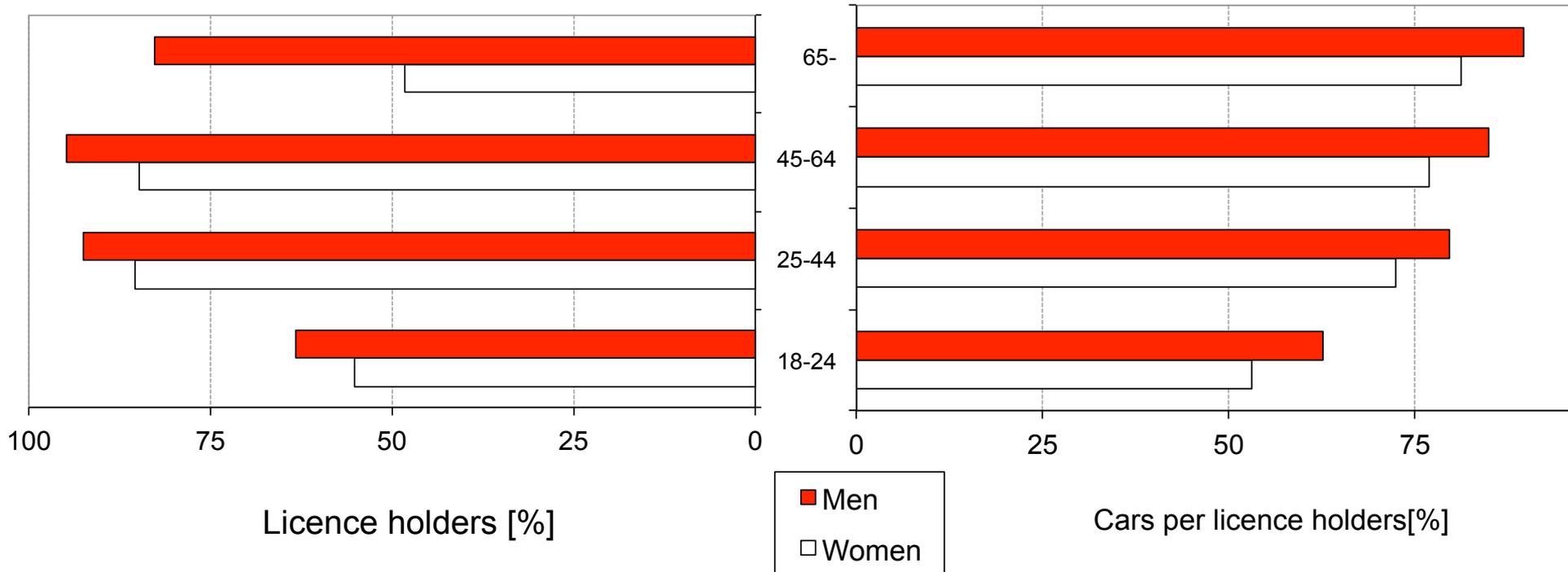
Car availability

Car always available by sex
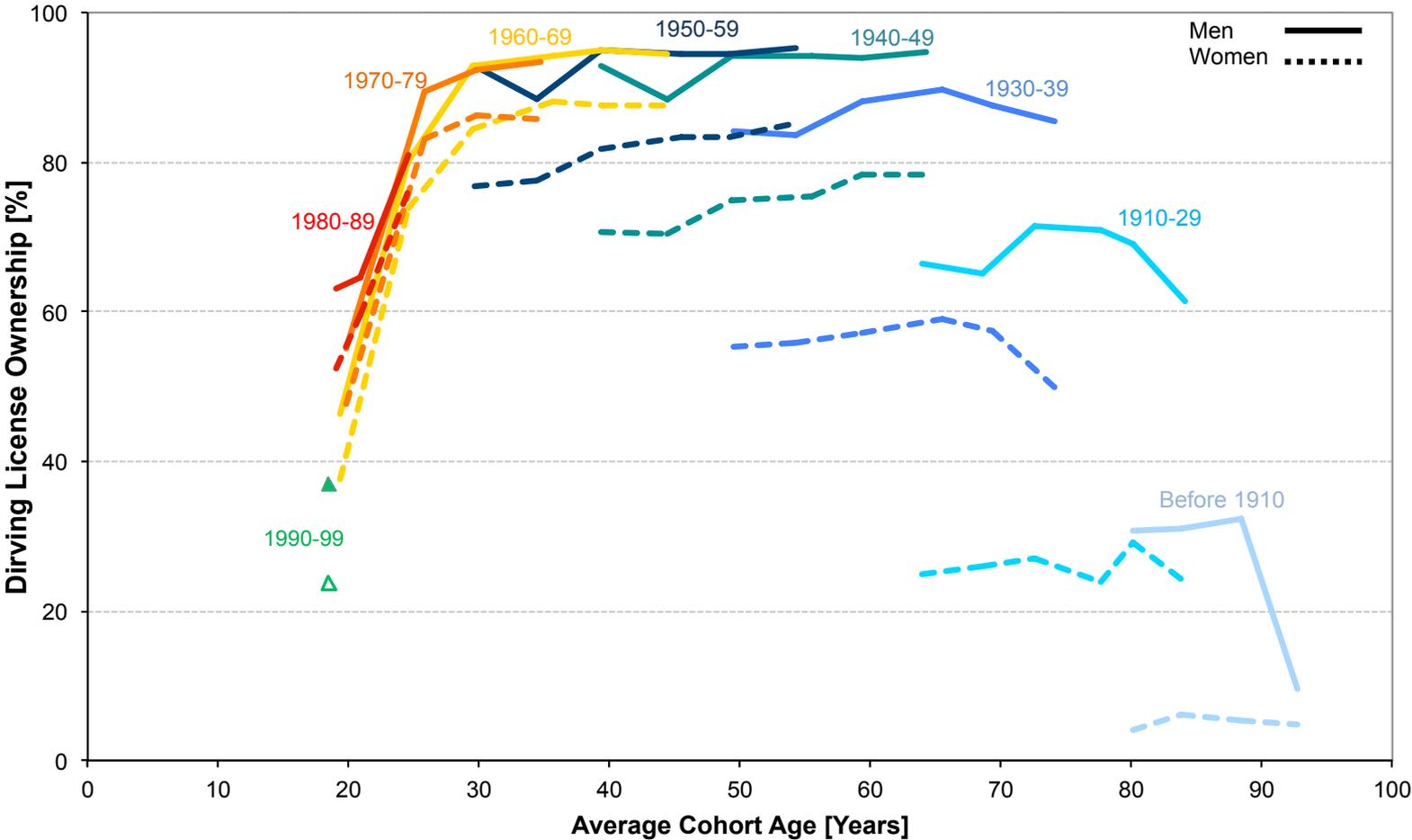
# Car always available by income tercile
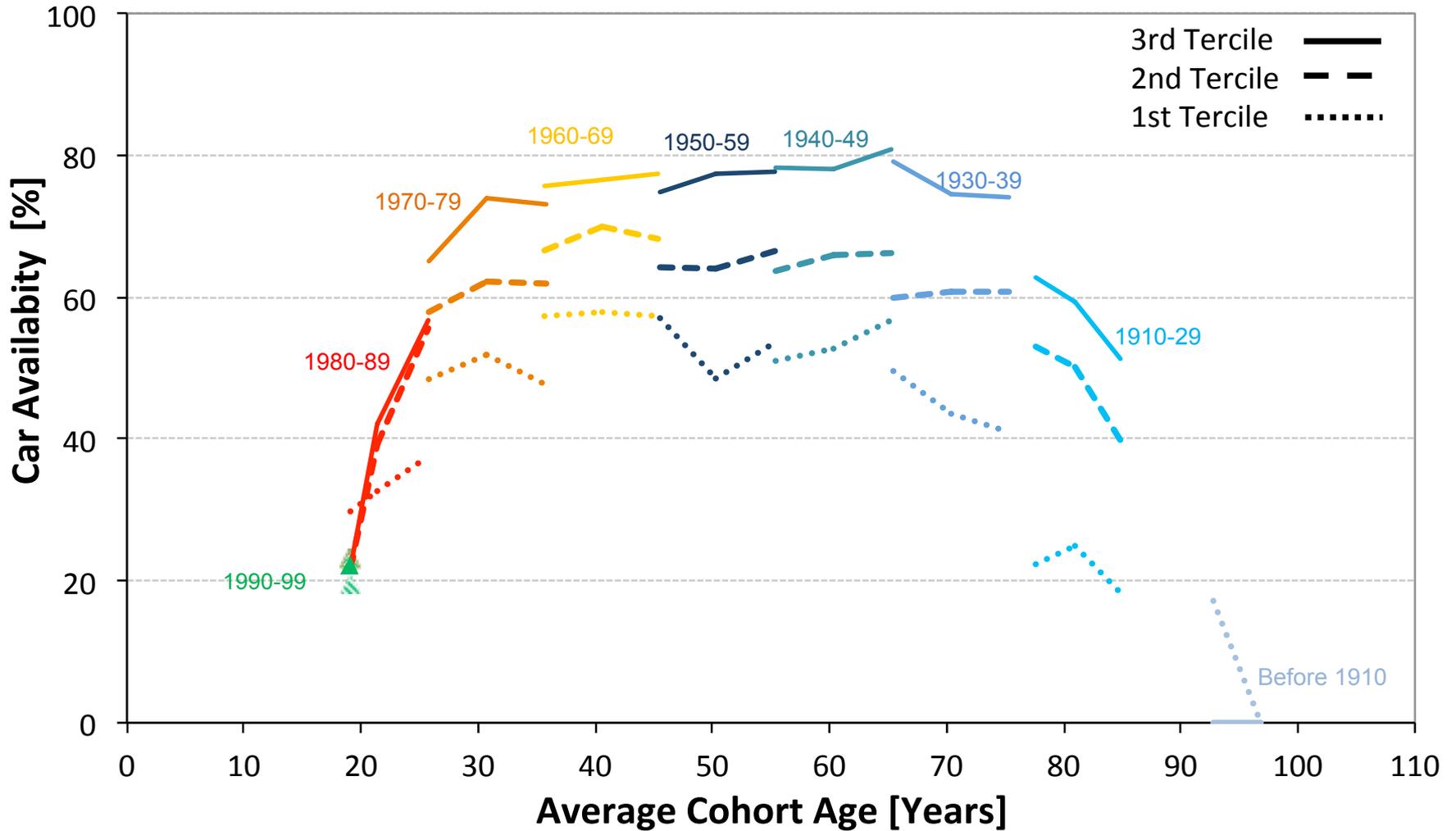
Season tickets by car ownership: 2010
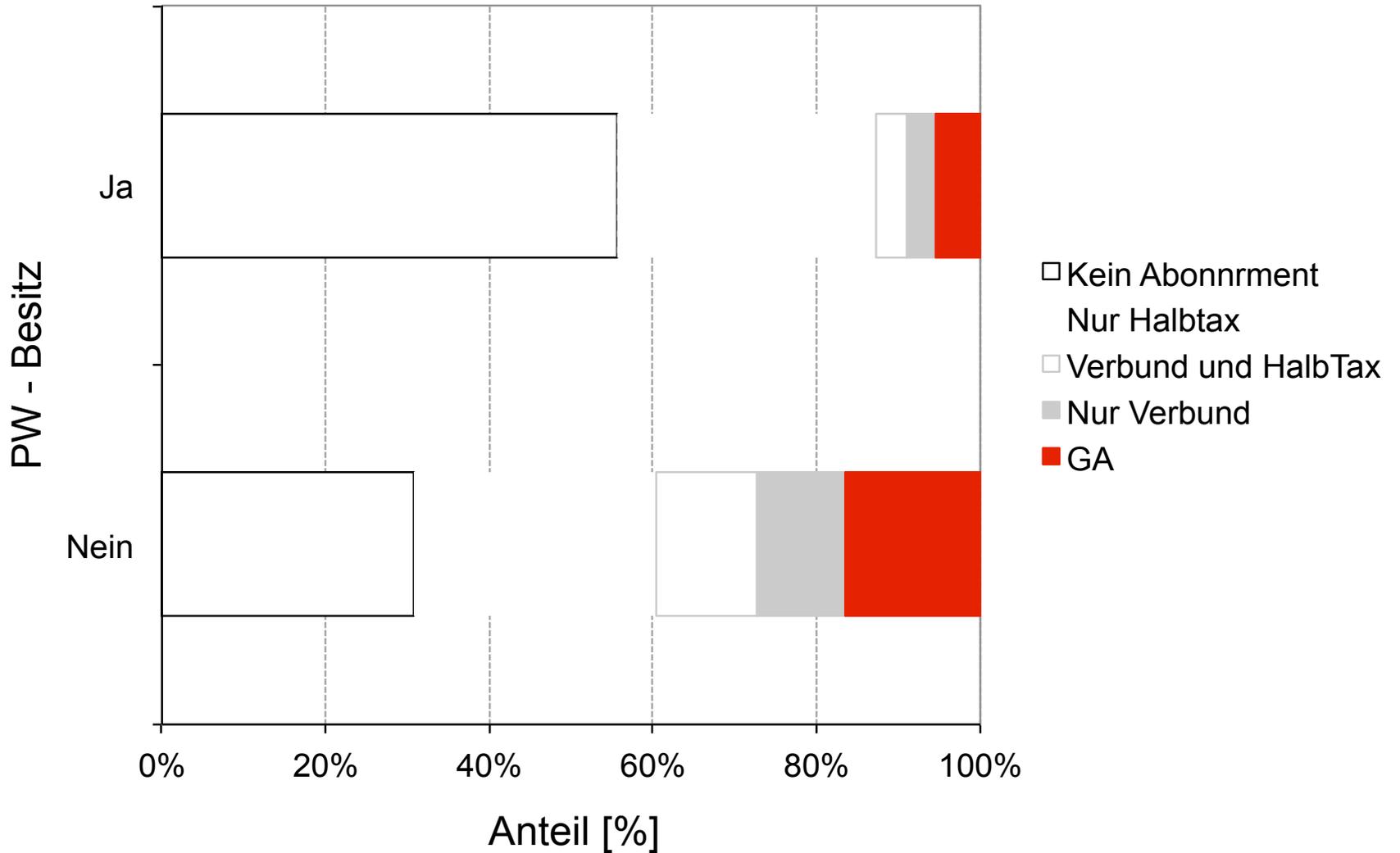
National and regional season tickets
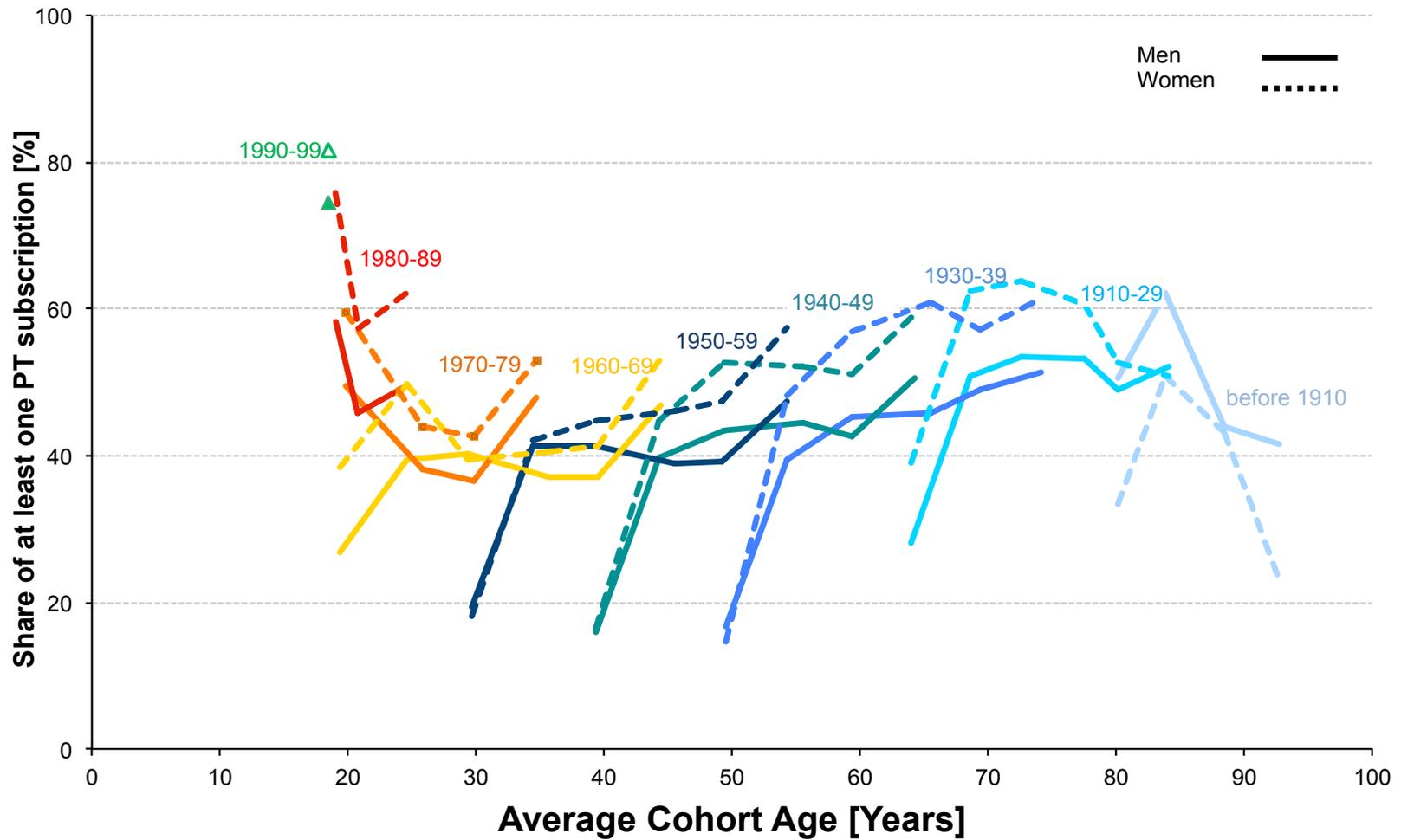
Time spent in activities

Activities: Time spent
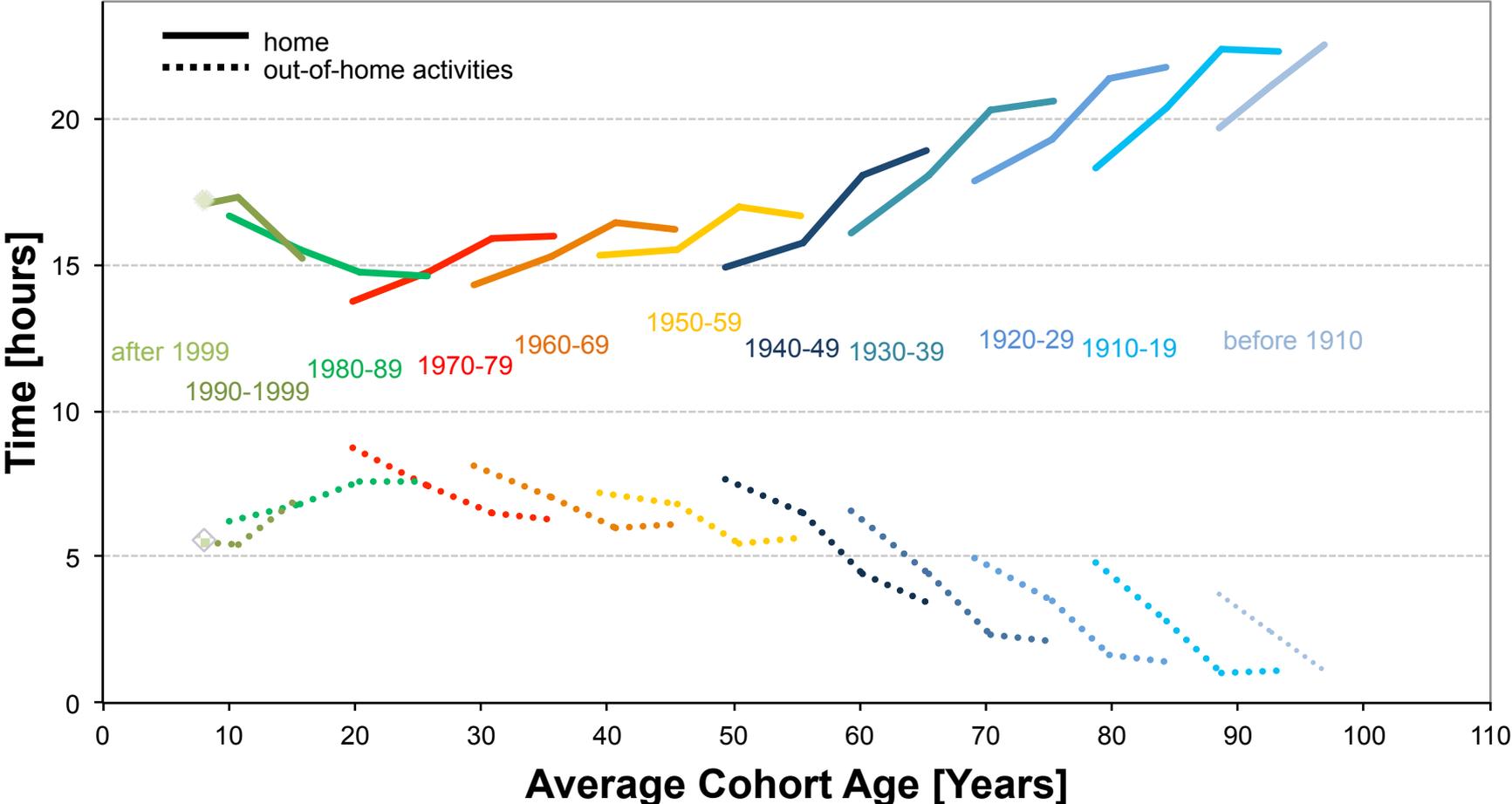
Daily number of activities

Number of activities: All purposes
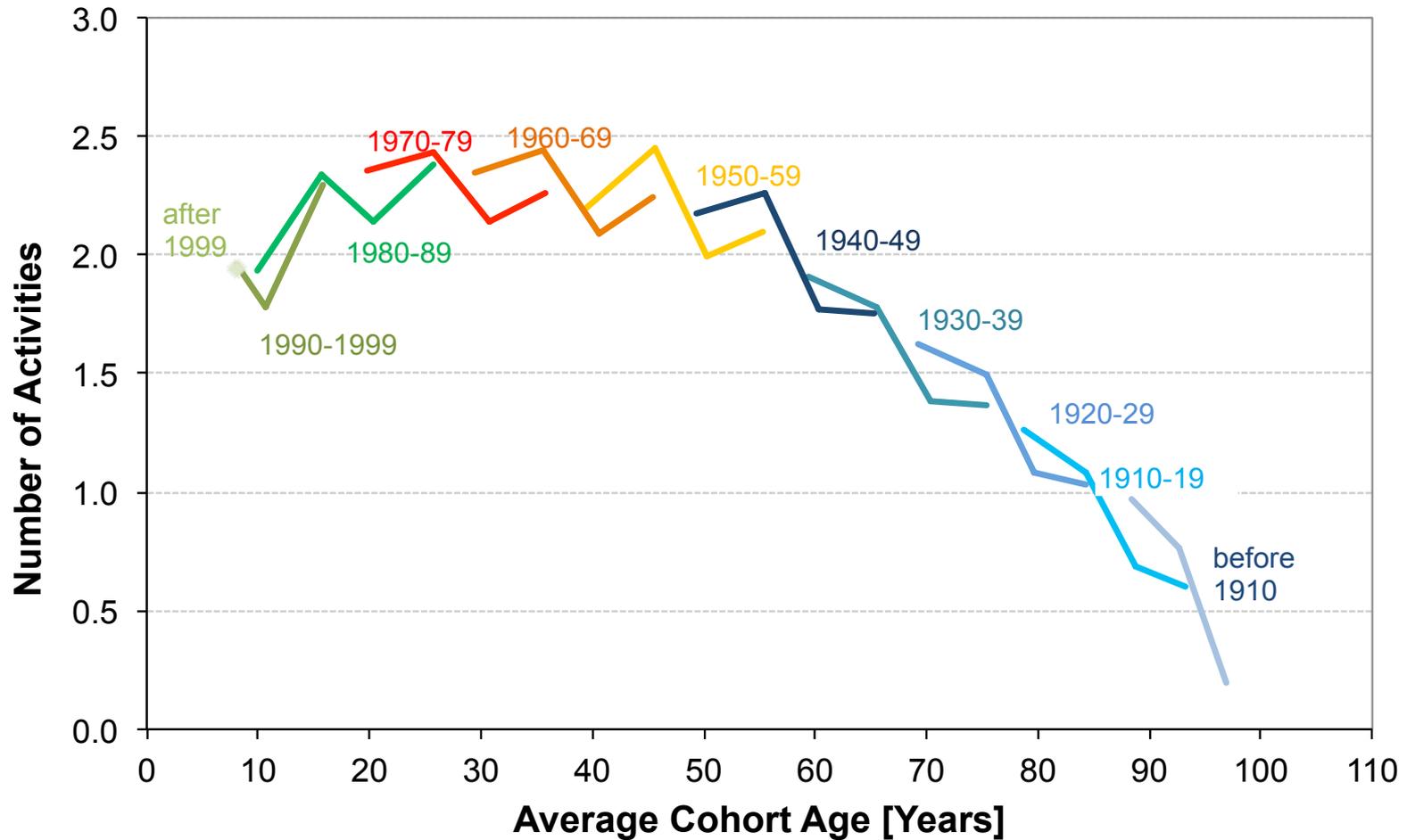
Number of activities: Leisure
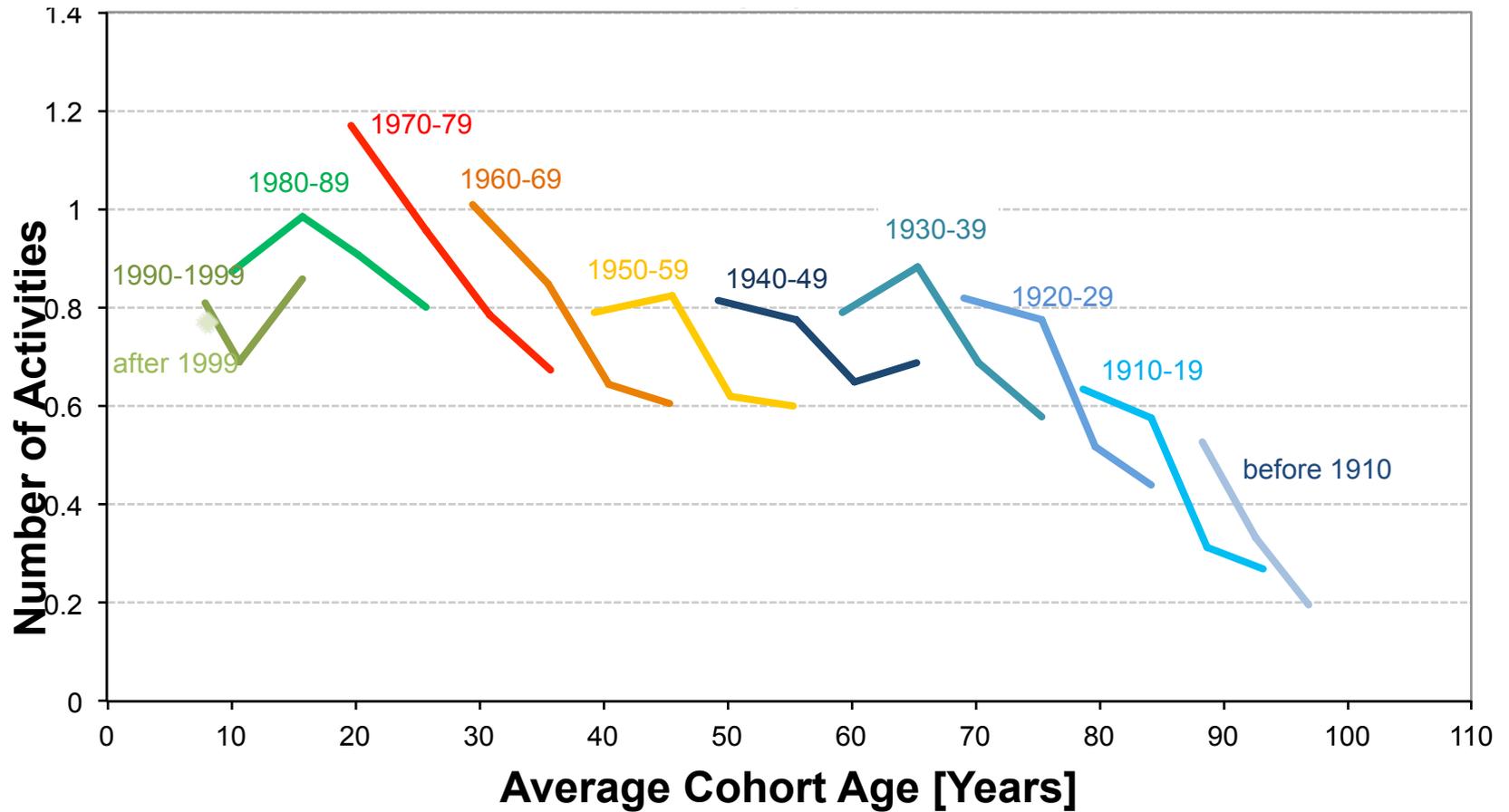
Number of activities: Working
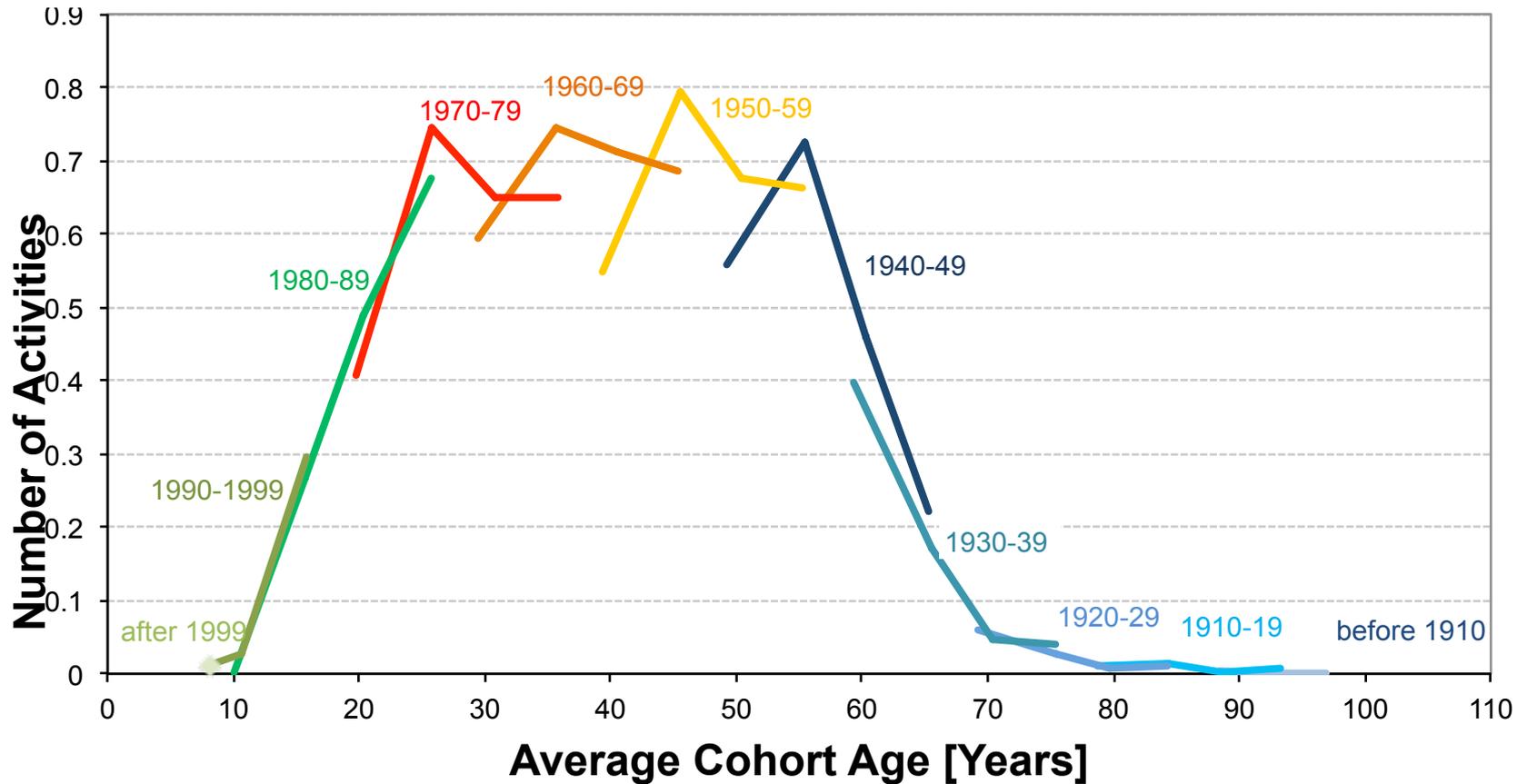
Number of activities: Education
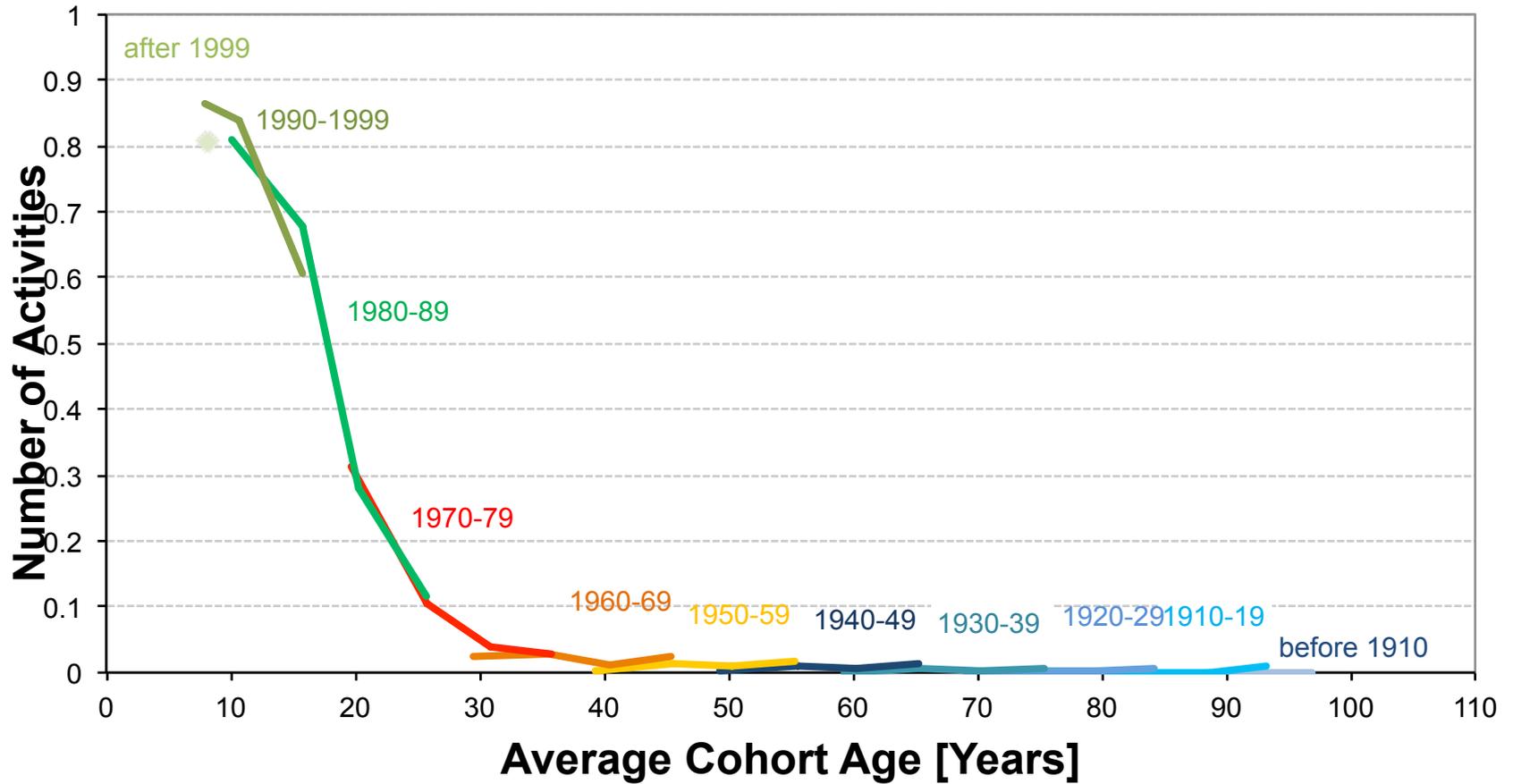
Number of activities: Shopping
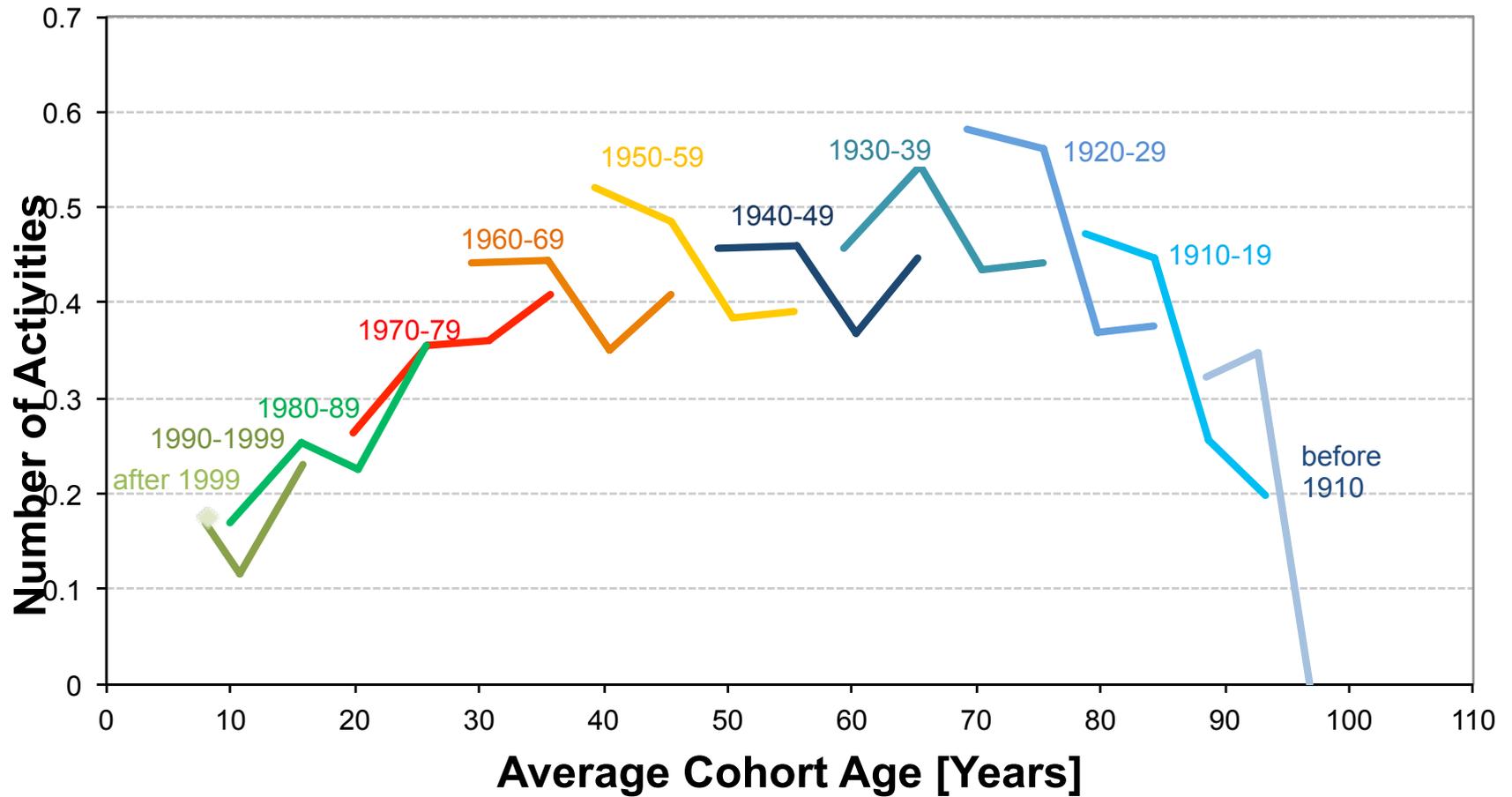
Daily number of trips

Daily number of trips
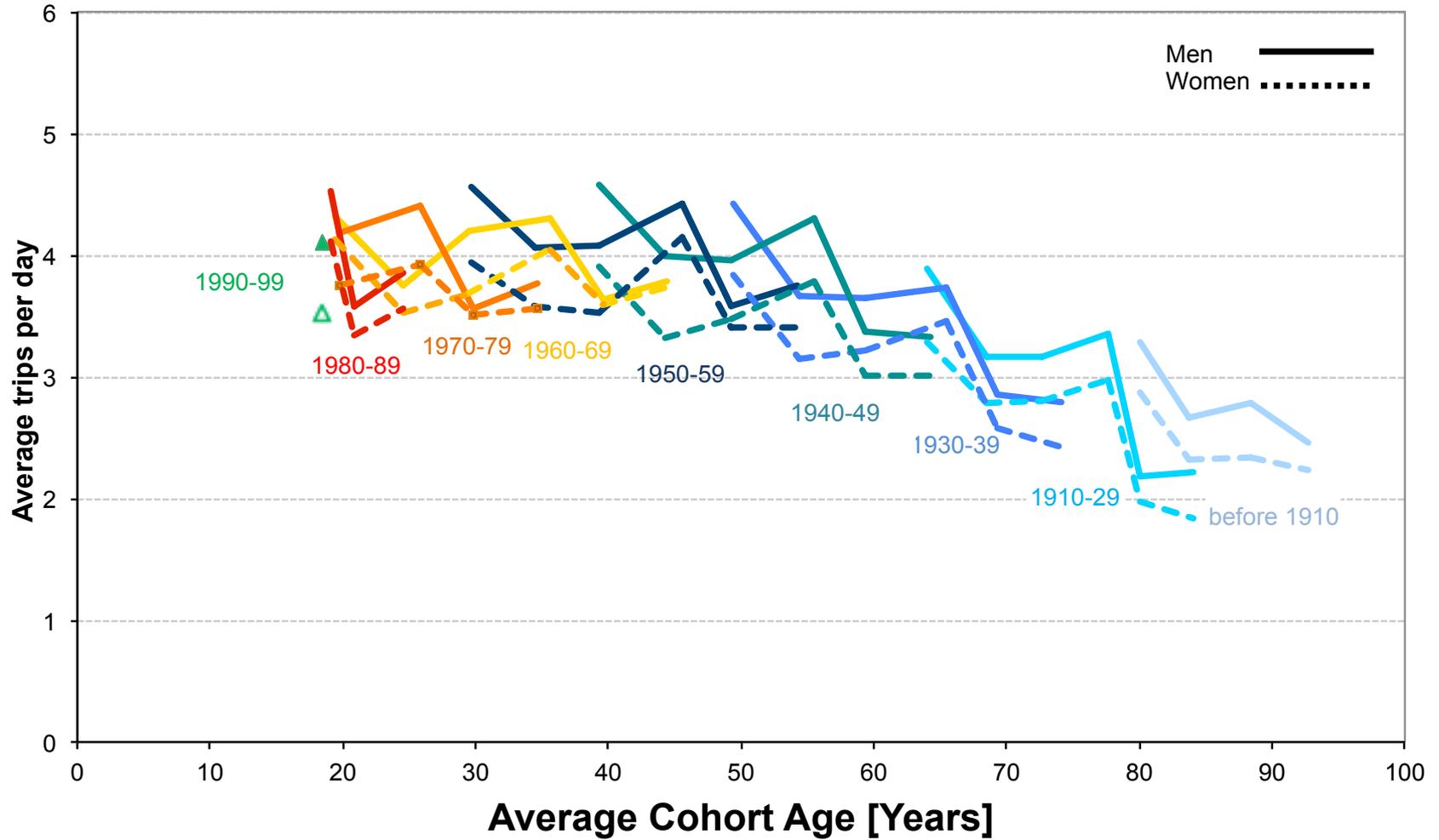
Daily number of trips (5 year cohorts)
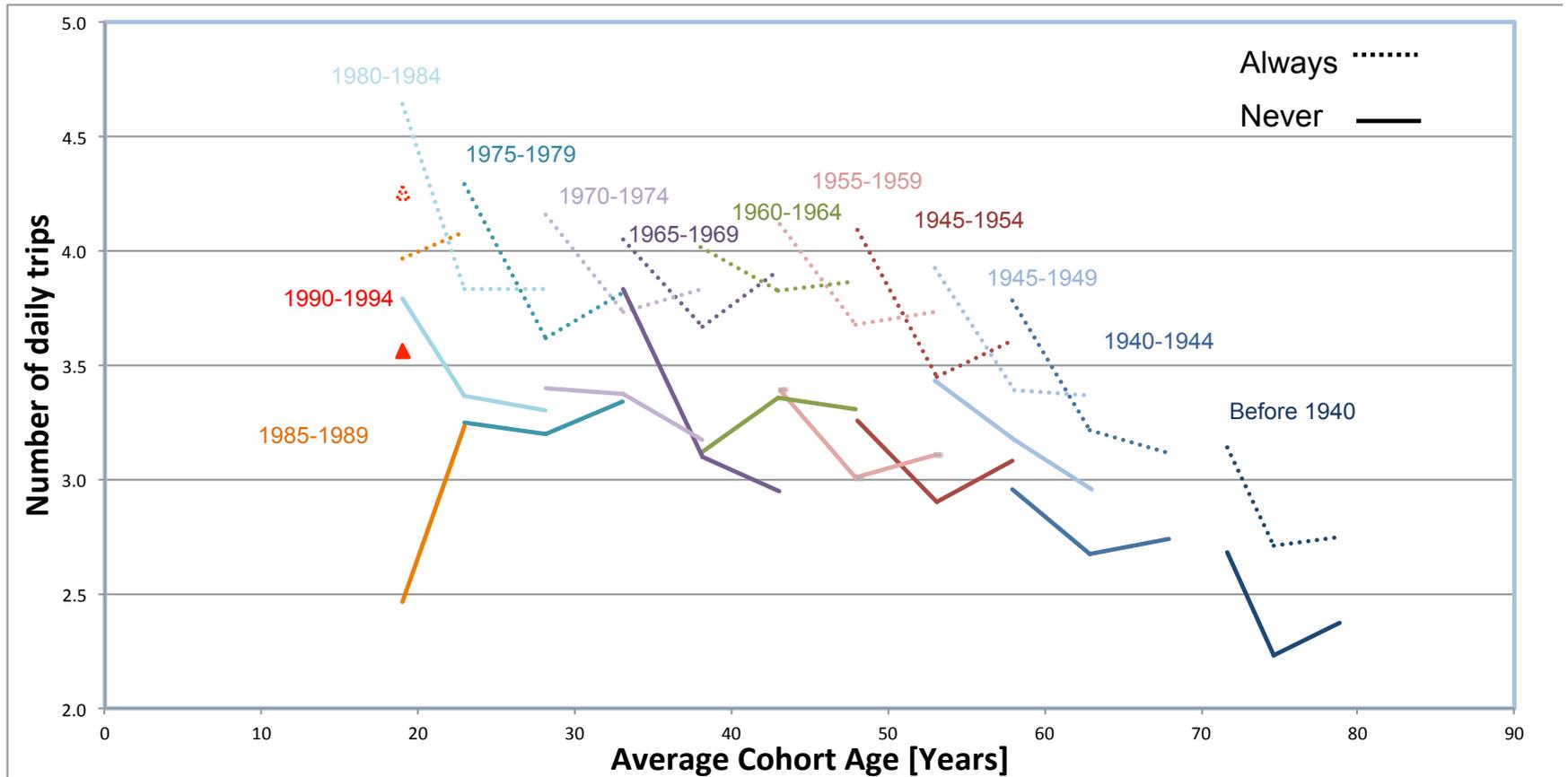
Activities per trip

Out-of-home activity / trip
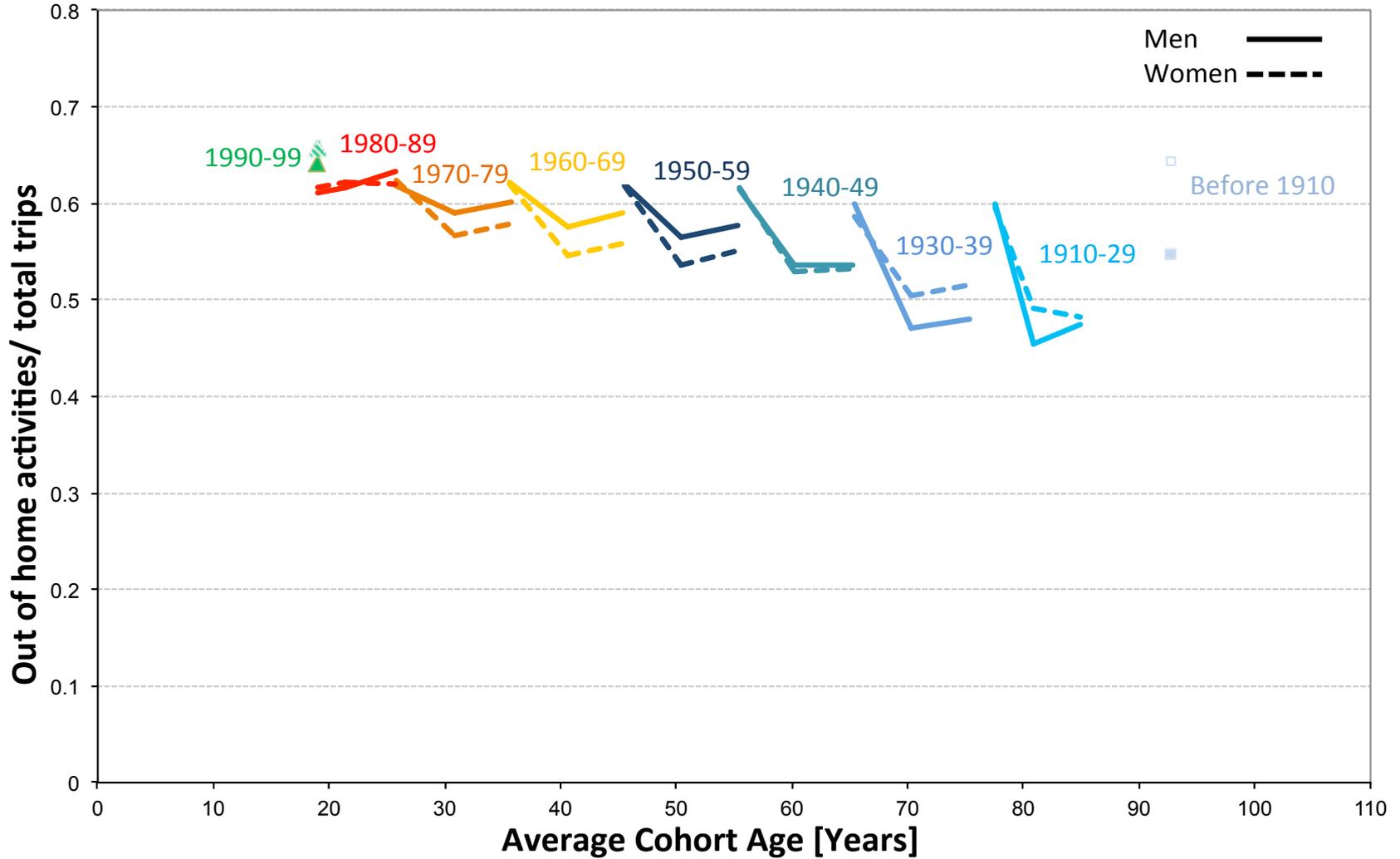
Durations and distances travelled

Daily duration travelled
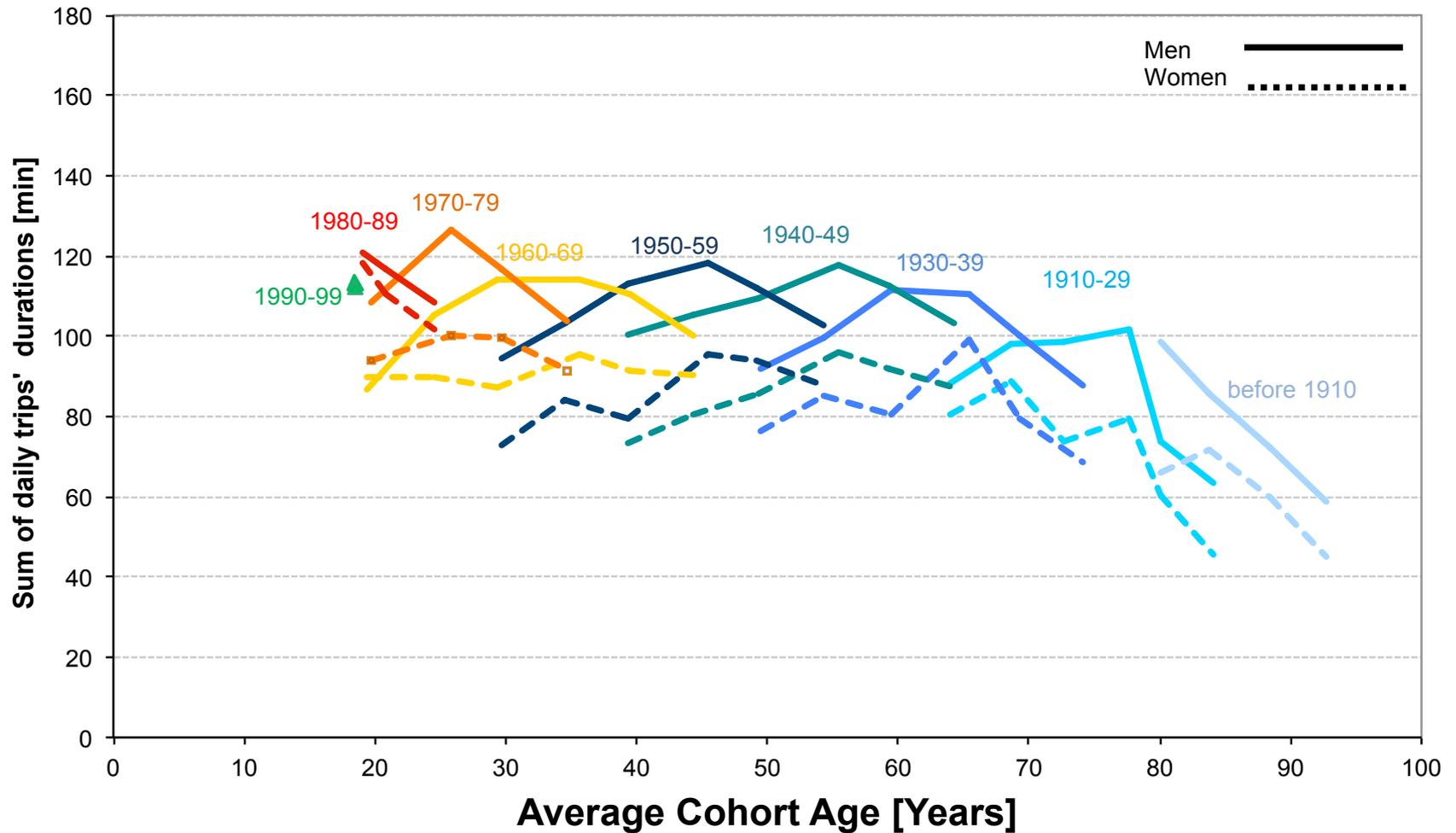
Daily distance travelled
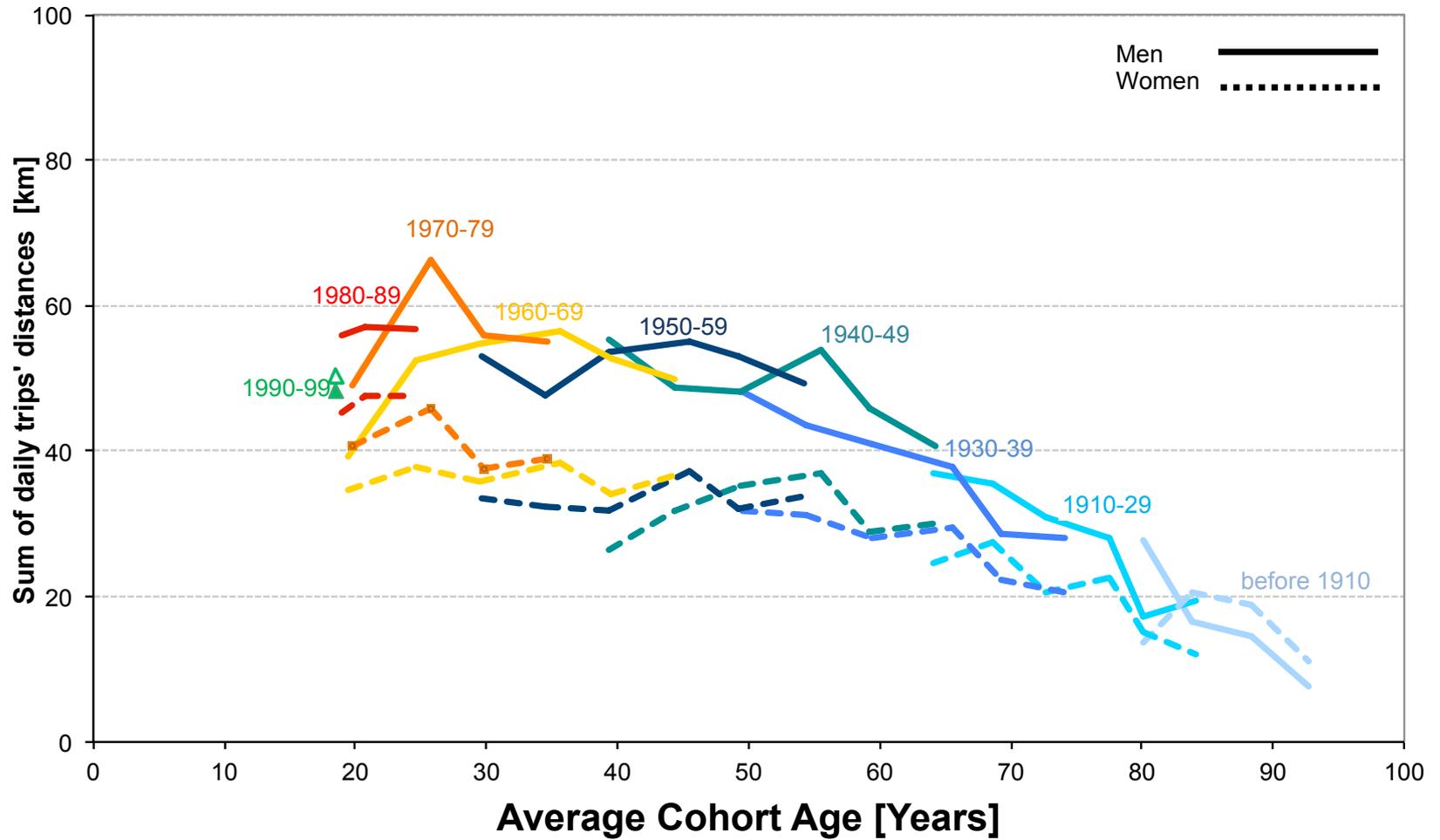
Daily distance travelled (10 year cohorts)
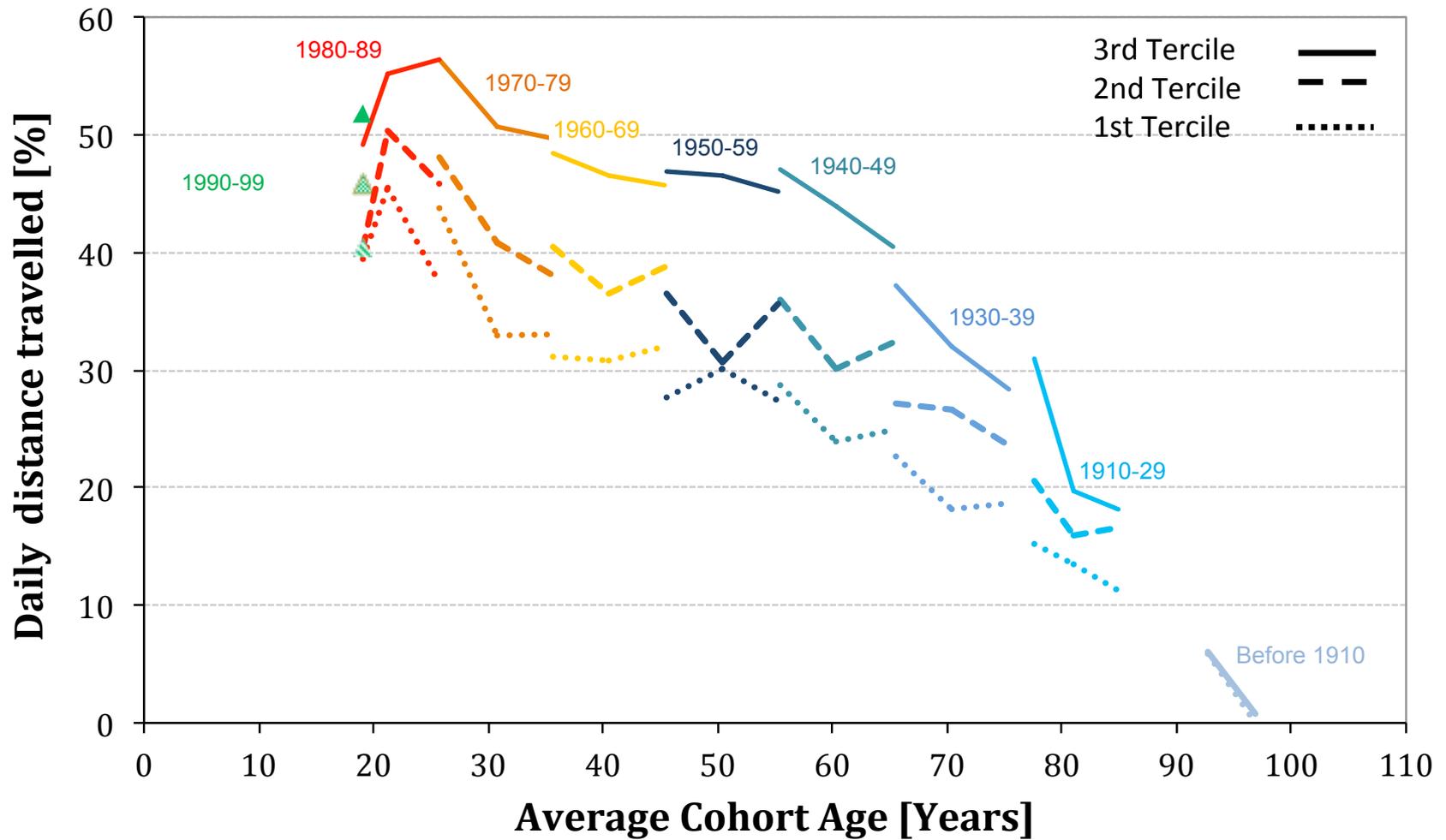
Mode share

Trip main mode share: Car
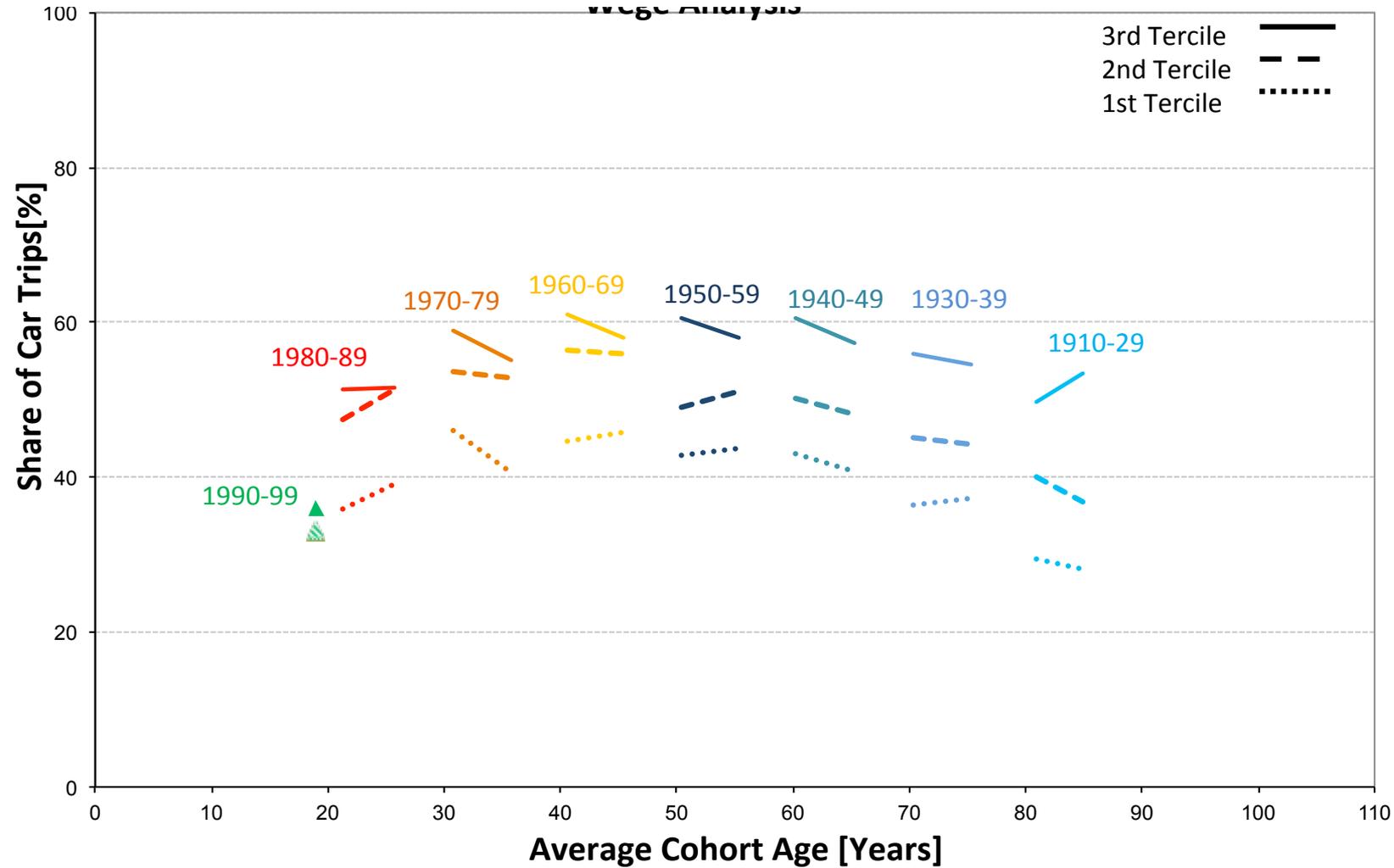
Daily number of car and public transport trips

Legend:
- Mikrozensus Schweiz 1984
- Mikrozensus Schweiz 1989
- Mikrozensus Schweiz 1994
- Mikrozensus Schweiz 2000
- Mikrozensus Schweiz 2005
- Mikrozensus Schweiz 2010

- ◆ Vehicle and season ticket
- ◇ No vehicle, but season ticket
- ■ Vehicle, but no season ticket
- □ Neither

X-axis: Public transport trips/day

Y-axis: Trips with motorized vehicles/day
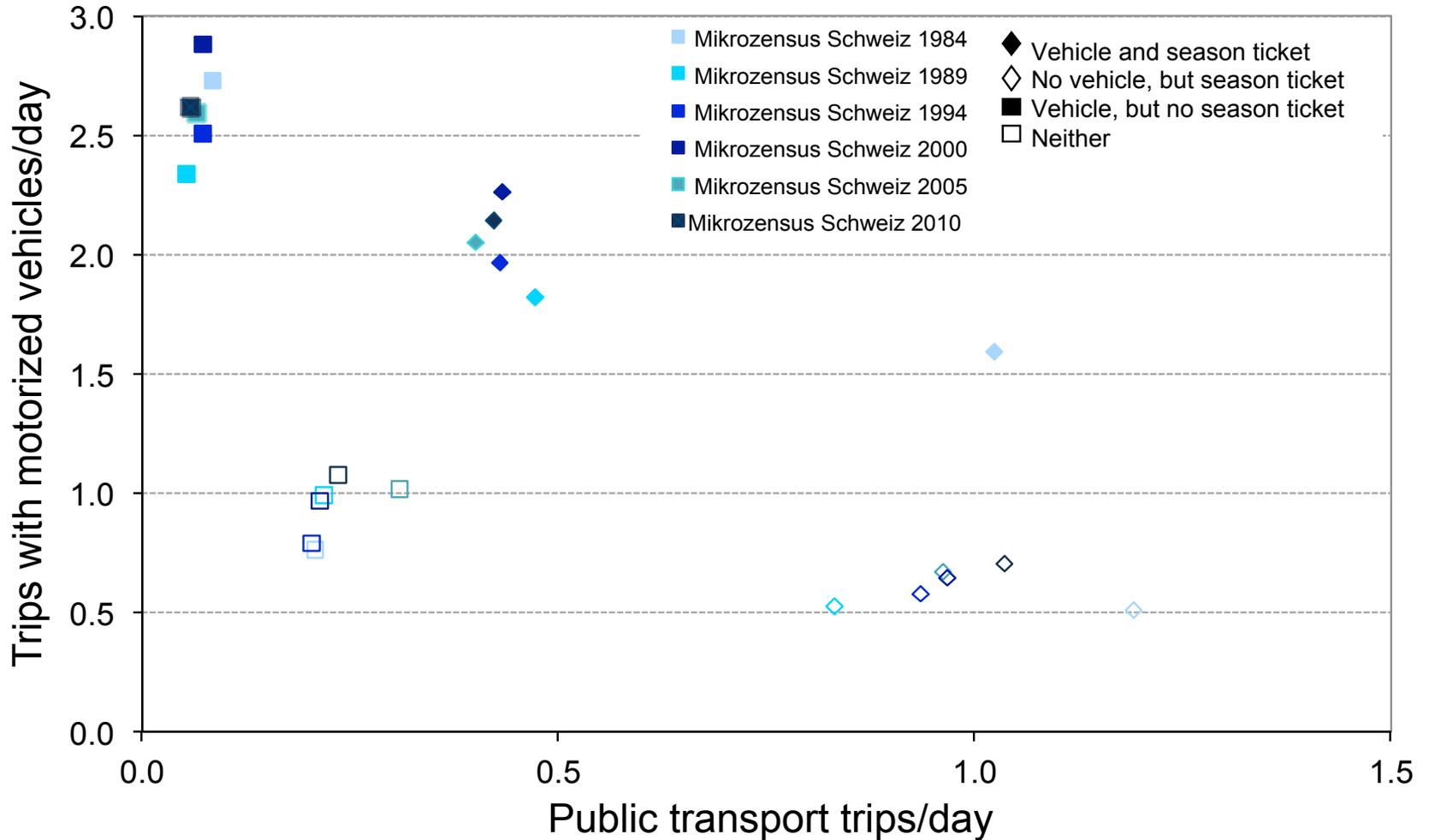
Accessibility and induced demand

Stable (ln) accessibilities, e.g. Switzerland 1850 – 2000

40
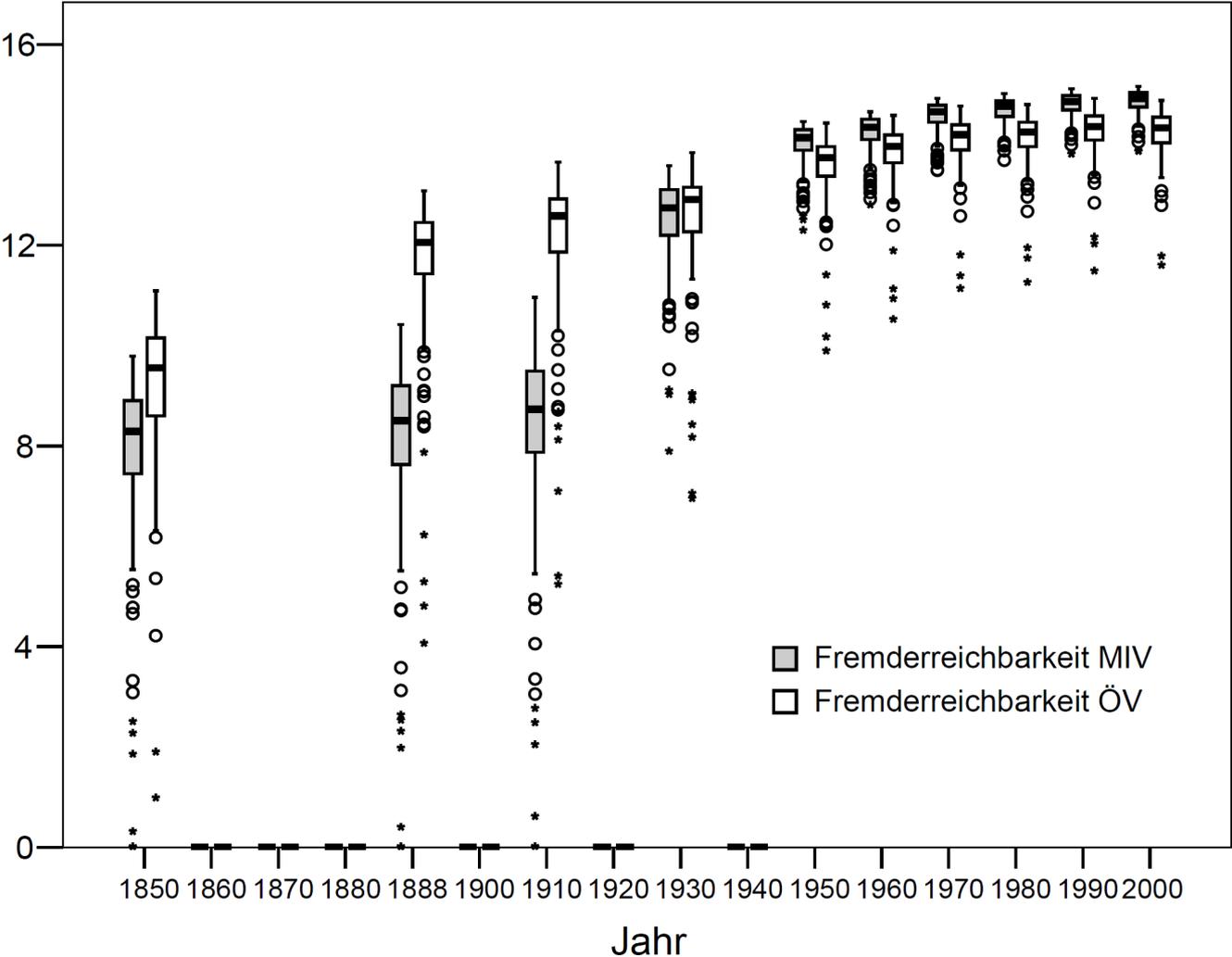
Mean elasticities with respect to

Accessibility	Share out-of-home	0.61
	Number of trips	0.44
	Number of trips per journey	0.24
	Time out-of-home	0.10
	Distance travelled	1.14
Priceindex for travel	Share out-of-home	-0.06
	Number of trips	-0.19
	Number of trips per journey	-1.66
	Time out-of-home	-1.95
	Distance travelled	-0.84

Municipal accessibility change for

All travel times -25%

All travel times -10%

All roads +30 km/h

All motorways +10 km/h

All motorways + 1 lane

All road in ZH + 1 land

Increase in accessibility [%]
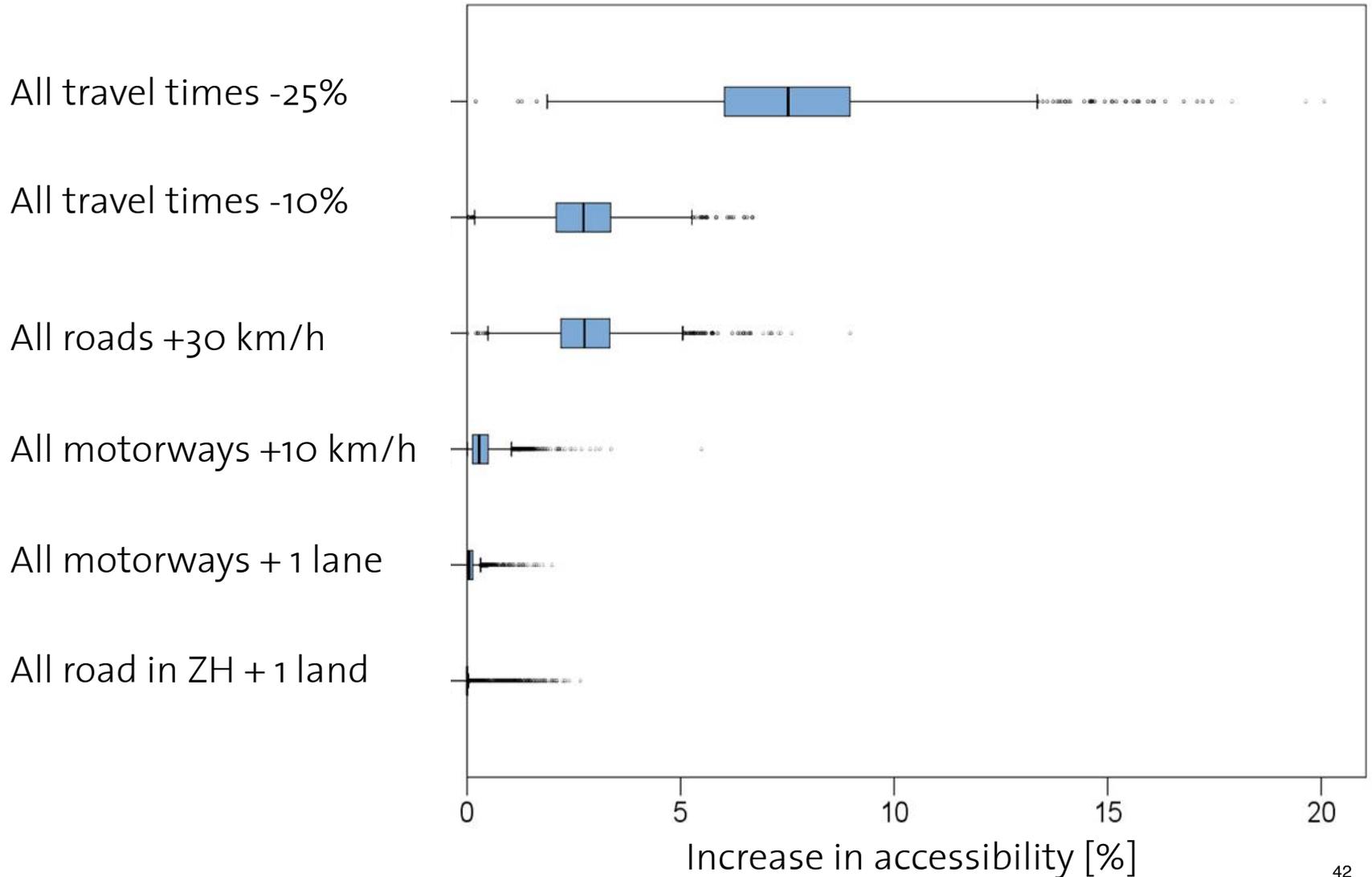
Summary

Drivers of traffic growth expected

VKT   =   365 * Act(X)/Day *Trip/Act * KT(Car, X, I) * Car%(Car, X, I)
            * Car(X) / Lic * Lic(X, I) / Capita * Pop(I, Y)

Act/Day	Constant
Trip/Act	Age
KT(Car, X,I)	Car availability
	Income
Car%(Car, X, I)	Income, Location
Car/Lic	Unchanged
Lic(X, I)/Capita	Younger cohorts
	Location
	Income

Appendix

Activity classification

|	WORK	LEISURE	SHOPPING	EDUCATION	BUSINESS	OTHER
MZ1994	WORK	LEISURE	SHOPPING	EDUCATION	BUSINESS	NO ANSWER (0%)
MZ2000	WORK	LEISURE	SHOPPING	EDUCATION	BUSINESS DIENSTFAHRT	ACCOMPANYING ERRANDS AND USE OF SERVICES CHANGE NO ANSWER
MZ2005	WORK	LEISURE	SHOPPING	EDUCATION	BUSINESS DIENSTFAHRT	ACCOMPANYING CHILDREN ACCOMPANYING NOT CHILDREN ERRANDS AND USE OF SERVICES OTHER OVERNIGHT FOREIGN PROPERTY PSEUDOETAPPE CHANGE
MZ2010	WORK	LEISURE	SHOPPING	EDUCATION	BUSINESS DIENSTFAHRT	ACCOMPANYING CHILDREN ACCOMPANYING NOT CHILDREN ERRANDS AND USE OF SERVICES OTHER OVERNIGHT FOREIGN PROPERTY PSEUDOETAPPE CHANGE

Income classification (2000-2010)

Rough match:

    Lowest tercile   Upto 4000 sFr/month before tax

    Middle tercile   4000-6000 sFr/month before tax

    Upper tercile   Over 6000 sFr/month before tax

Number of activities: Business

Number of activities: Other