

**Supplementary Table 1.** Breast cancer characteristics within the screen-detected cancers after excluding the percentage of assumed overdiagnosis.

	Screen-detected cancers		Screen-detected cancers	
	10% overdiagnosis	0% overdiagnosis*	30% overdiagnosis	
	N (%)	N (%)	N (%)	
<b>Age</b>				
- mean (IQR)	63 (58-68)	63 (58-68)	63 (57-68)	
49-59	15,610 (33.4)	17,351 (33.4)	12,294 (33.8)	
60-69	22,194 (47.5)	24,695 (47.6)	17,176 (47.3)	
70-74	8,932 (19.1)	9,881 (19.0)	6,879 (18.9)	
<b>Year</b>				
2006	3,631 (7.8)	4,036 (7.8)	2,820 (7.8)	
2007	3,976 (8.5)	4,444 (8.6)	3,151 (8.7)	
2008	4,051 (8.7)	4,467 (8.6)	3,140 (8.6)	
2009	4,127 (8.8)	4,577 (8.8)	3,282 (9.0)	
2010	4,526 (9.7)	4,999 (9.6)	3,487 (9.6)	
2011	4,850 (10.4)	5,369 (10.3)	3,707 (10.3)	
2012	5,241 (11.2)	5,807 (11.2)	4,083 (11.2)	
2013	5,490 (11.7)	6,141 (11.8)	4,262 (11.7)	
2014	5,349 (11.4)	5,967 (11.5)	4,169 (11.5)	
2015	5,493 (11.8)	6,120 (11.8)	4,248 (11.7)	
<b>SES</b>				
High (8-9-10)	14,486 (31.0)	16,105 (31.0)	11,268 (31.0)	
Medium (4-5-6-7)	18,681 (40.0)	20,800 (40.1)	14,521 (33.9)	
Low (1-2-3)	13,567 (29.0)	15,022 (28.9)	10,560 (29.1)	
Total	46,734 (100)	51,927 (100)	36,349 (100)	

Abbreviations: IQR: interquartile range; SES: socioeconomic status

\* 0% overdiagnosis means that all patients are included in the analysis

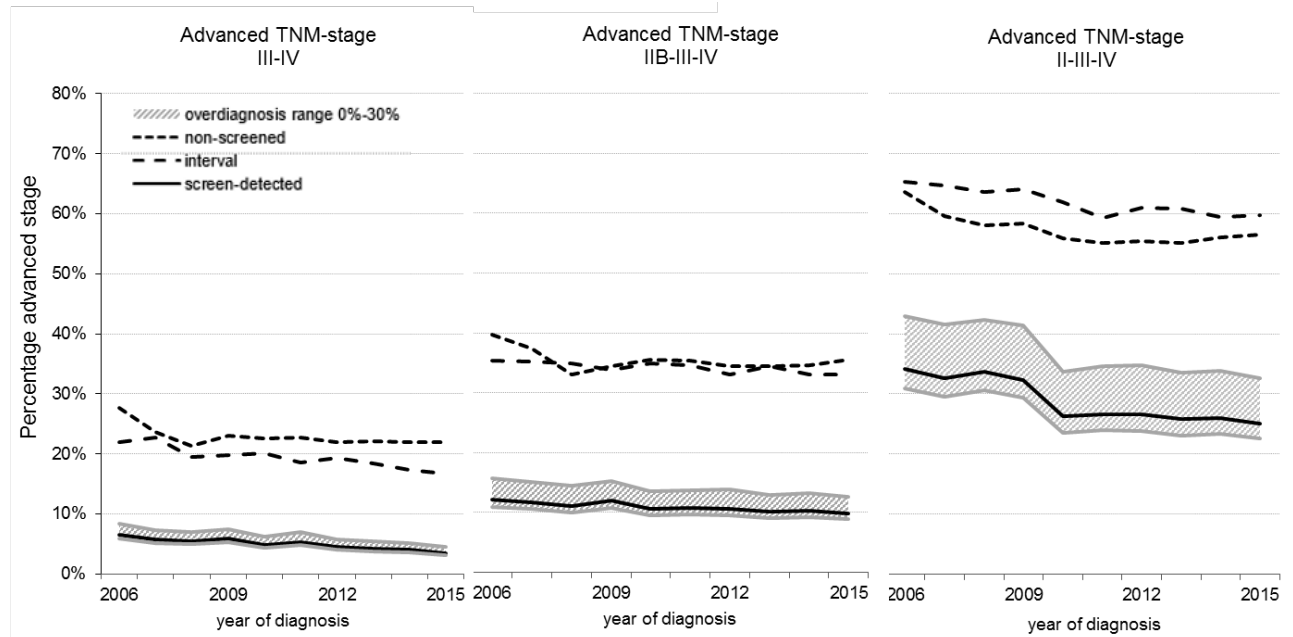
**Supplementary Table 2.**

Percentage early- and advanced-stage disease of the remaining selection of screen-detected cancers after excluding the percentage of assumed overdiagnosis.

	Screen-detected cancers		Screen-detected cancers	
	10% overdiagnosis	0% overdiagnosis*	30% overdiagnosis	
	N (%)	N (%)	N (%)	
<b>TNM-Stage</b>				
Early-stage (St 0-I-II)	44,368 (95.1)	49,561 (95.6)	33,983 (93.7)	
Advanced-stage (St III- IV)	2,272 (4.9)	2,272 (4.4)	2,272 (6.3)	
Unknown	94	94	94	
<b>NM-Stage</b>				
Early-stage (N0M0)	35,391 (78.8)	40,584 (81.0)	25,006 (72.4)	
Advanced-stage (N+ and/or M+)	9,514 (21.2)	9,514 (19.0)	9,514 (27.6)	
Unknown	1,829	1,829	1,829	
<b>T-size</b>				
Early-stage (<15mm)	28,467 (62.4)	33,660 (66.3)	18,082 (51.3)	
Advanced-stage (≥15mm)	17,133 (37.6)	17,133 (33.7)	17,133 (48.7)	
Unknown	1,134	1,134	1,134	
Total	46,734 (100)	51,927 (100)	36,349 (100)	

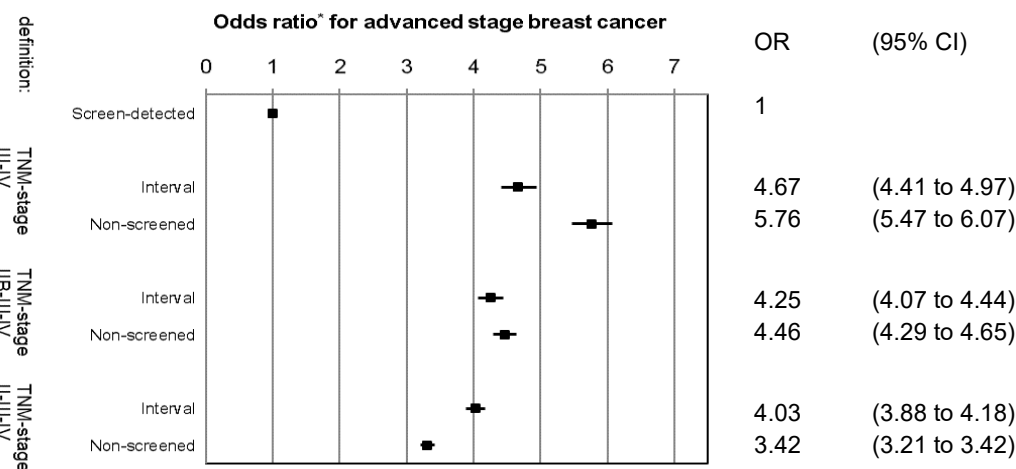
\* 0% overdiagnosis means that all patients are included

**Supplementary Figure 1.** Percentages of advanced breast cancers over time for two other definitions of advanced TNM-stage, compared to the main definition



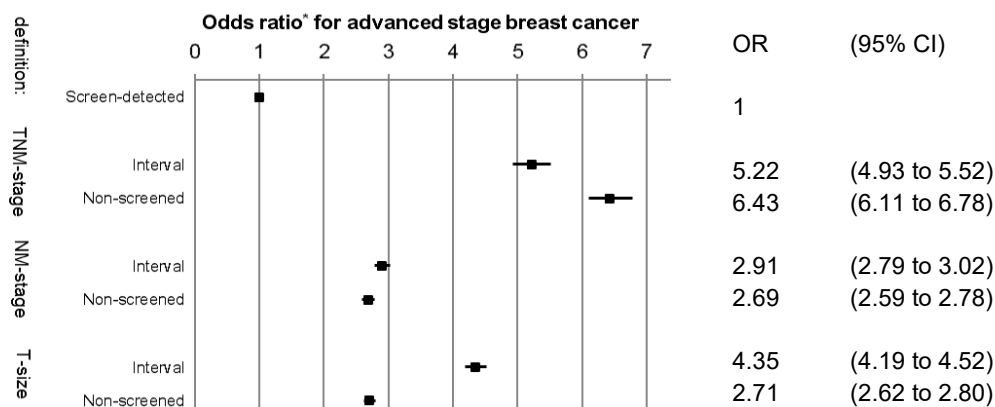
The solid line indicates the screen-detected cancers assuming 10% overdiagnosis. The shaded area then indicates the percentage assuming 0% overdiagnosis (lower limit) to 30% overdiagnosis (upper limit).

**Supplementary Figure 2.** Odds ratios for advanced breast cancer for two other definitions of advanced TNM-stage, compared to the main definition



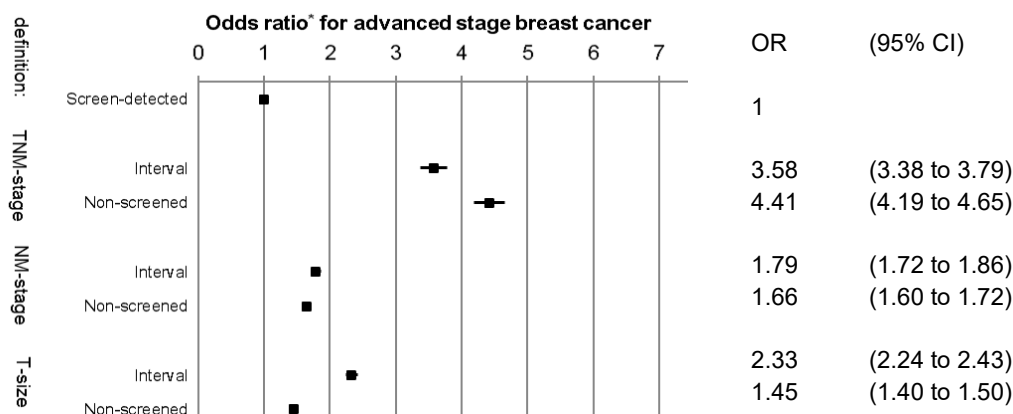
\* Multivariable analyses corrected for age, year of diagnosis, socioeconomic status  
Abbreviations: 95%CI: 95% Confidence interval

**Supplementary Figure 3.** Odds ratios for advanced breast cancer between different cohorts by three definitions of advanced stage, assuming 0%, no overdiagnosis



\* Multivariable analyses corrected for age, year of diagnosis, socioeconomic status  
Abbreviations: 95%CI: 95% Confidence interval

**Supplementary Figure 4.** Odds ratios for advanced breast cancer between different cohorts by three definitions of advanced stage, assuming 30% overdiagnosis#



# 30% of all screen-detected cancers (n=51,927) were assumed to be overdiagnosed (n=15,578). As overdiagnosis occurs in the early screen-detected cancers by definition, we randomly excluded 15,578 cancers from the early screen-detected cancers as an attempt to correct for overdiagnosis.

\* Multivariable analyses corrected for age, year of diagnosis, socioeconomic status  
Abbreviations: 95%CI: 95% Confidence interval