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Appendix 1

Durbin Watson Test Result for Years Lived with Disability (YLD)

No	Location	d	dL	dU	4-dL	4-dU
1.	Indonesia	0.163	1.3929	1.5136	2.6071	2.4864
2.	Aceh	0.295	1.3929	1.5136	2.6071	2.4864
3.	Bali	0.296	1.3929	1.5136	2.6071	2.4864
4.	Banten	0.145	1.3929	1.5136	2.6071	2.4864
5.	Bengkulu	0.516	1.3929	1.5136	2.6071	2.4864
6.	Yogyakarta (DIY)	0.268	1.3929	1.5136	2.6071	2.4864
7.	Gorontalo	0.134	1.3929	1.5136	2.6071	2.4864
8.	Jakarta	0.450	1.3929	1.5136	2.6071	2.4864
9.	Jambi	1.412	1.3929	1.5136	2.6071	2.4864
10.	West Java	0.652	1.3929	1.5136	2.6071	2.4864
11.	Central Java	0.207	1.3929	1.5136	2.6071	2.4864
12.	East Java	0.115	1.3929	1.5136	2.6071	2.4864
13.	West Kalimantan	0.124	1.3929	1.5136	2.6071	2.4864
14.	South Kalimantan	0.136	1.3929	1.5136	2.6071	2.4864
15.	Central Kalimantan	0.892	1.3929	1.5136	2.6071	2.4864
16.	East Kalimantan	0.440	1.3929	1.5136	2.6071	2.4864
17.	North Kalimantan	1.066	1.3929	1.5136	2.6071	2.4864
18.	Bangka Belitung Islands	0.752	1.3929	1.5136	2.6071	2.4864
19.	Riau Islands	0.700	1.3929	1.5136	2.6071	2.4864
20.	Lampung	0.298	1.3929	1.5136	2.6071	2.4864
21.	Maluku	0.302	1.3929	1.5136	2.6071	2.4864
22.	North Maluku	0.322	1.3929	1.5136	2.6071	2.4864
23.	West Nusa Tenggara	0.152	1.3929	1.5136	2.6071	2.4864
24.	East Nusa Tenggara	0.284	1.3929	1.5136	2.6071	2.4864
25.	Papua	0.480	1.3929	1.5136	2.6071	2.4864
26.	West Papua	0.548	1.3929	1.5136	2.6071	2.4864
27.	Riau	0.093	1.3929	1.5136	2.6071	2.4864
28.	West Sulawesi	0.451	1.3929	1.5136	2.6071	2.4864
29.	South Sulawesi	0.160	1.3929	1.5136	2.6071	2.4864
30.	Central Sulawesi	0.297	1.3929	1.5136	2.6071	2.4864
31.	Southeast Sulawesi	0.257	1.3929	1.5136	2.6071	2.4864
32.	North Sulawesi	0.606	1.3929	1.5136	2.6071	2.4864
33.	West Sumatra	0.350	1.3929	1.5136	2.6071	2.4864
34.	South Sumatra	0.252	1.3929	1.5136	2.6071	2.4864
35.	North Sumatra	0.207	1.3929	1.5136	2.6071	2.4864

Durbin Watson Test Result for Years of Life Lost (YLL)

No	Location	d	dL	dU	4-dL	4-dU
1.	Indonesia	0.409	1.3929	1.5136	2.6071	2.4864
2.	Aceh	0.953	1.3929	1.5136	2.6071	2.4864
3.	Bali	0.379	1.3929	1.5136	2.6071	2.4864
4.	Banten	0.323	1.3929	1.5136	2.6071	2.4864
5.	Bengkulu	1.101	1.3929	1.5136	2.6071	2.4864
6.	Yogyakarta (DIY)	0.312	1.3929	1.5136	2.6071	2.4864
7.	Gorontalo	0.315	1.3929	1.5136	2.6071	2.4864
8.	Jakarta	0.958	1.3929	1.5136	2.6071	2.4864
9.	Jambi	1.549	1.3929	1.5136	2.6071	2.4864
10.	West Java	1.240	1.3929	1.5136	2.6071	2.4864
11.	Central Java	0.209	1.3929	1.5136	2.6071	2.4864
12.	East Java	0.136	1.3929	1.5136	2.6071	2.4864
13.	West Kalimantan	0.336	1.3929	1.5136	2.6071	2.4864
14.	South Kalimantan	0.443	1.3929	1.5136	2.6071	2.4864
15.	Central Kalimantan	1.873	1.3929	1.5136	2.6071	2.4864
16.	East Kalimantan	1.081	1.3929	1.5136	2.6071	2.4864
17.	North Kalimantan	1.273	1.3929	1.5136	2.6071	2.4864
18.	Bangka Belitung Islands	0.960	1.3929	1.5136	2.6071	2.4864
19.	Riau Islands	1.492	1.3929	1.5136	2.6071	2.4864
20.	Lampung	0.355	1.3929	1.5136	2.6071	2.4864
21.	Maluku	0.935	1.3929	1.5136	2.6071	2.4864
22.	North Maluku	0.524	1.3929	1.5136	2.6071	2.4864
23.	West Nusa Tenggara	0.334	1.3929	1.5136	2.6071	2.4864
24.	East Nusa Tenggara	0.682	1.3929	1.5136	2.6071	2.4864
25.	Papua	1.232	1.3929	1.5136	2.6071	2.4864
26.	West Papua	1.282	1.3929	1.5136	2.6071	2.4864
27.	Riau	0.320	1.3929	1.5136	2.6071	2.4864
28.	West Sulawesi	1.033	1.3929	1.5136	2.6071	2.4864
29.	South Sulawesi	0.283	1.3929	1.5136	2.6071	2.4864
30.	Central Sulawesi	0.556	1.3929	1.5136	2.6071	2.4864
31.	Southeast Sulawesi	0.627	1.3929	1.5136	2.6071	2.4864
32.	North Sulawesi	0.761	1.3929	1.5136	2.6071	2.4864
33.	West Sumatra	0.765	1.3929	1.5136	2.6071	2.4864
34.	South Sumatra	0.506	1.3929	1.5136	2.6071	2.4864
35.	North Sumatra	0.552	1.3929	1.5136	2.6071	2.4864

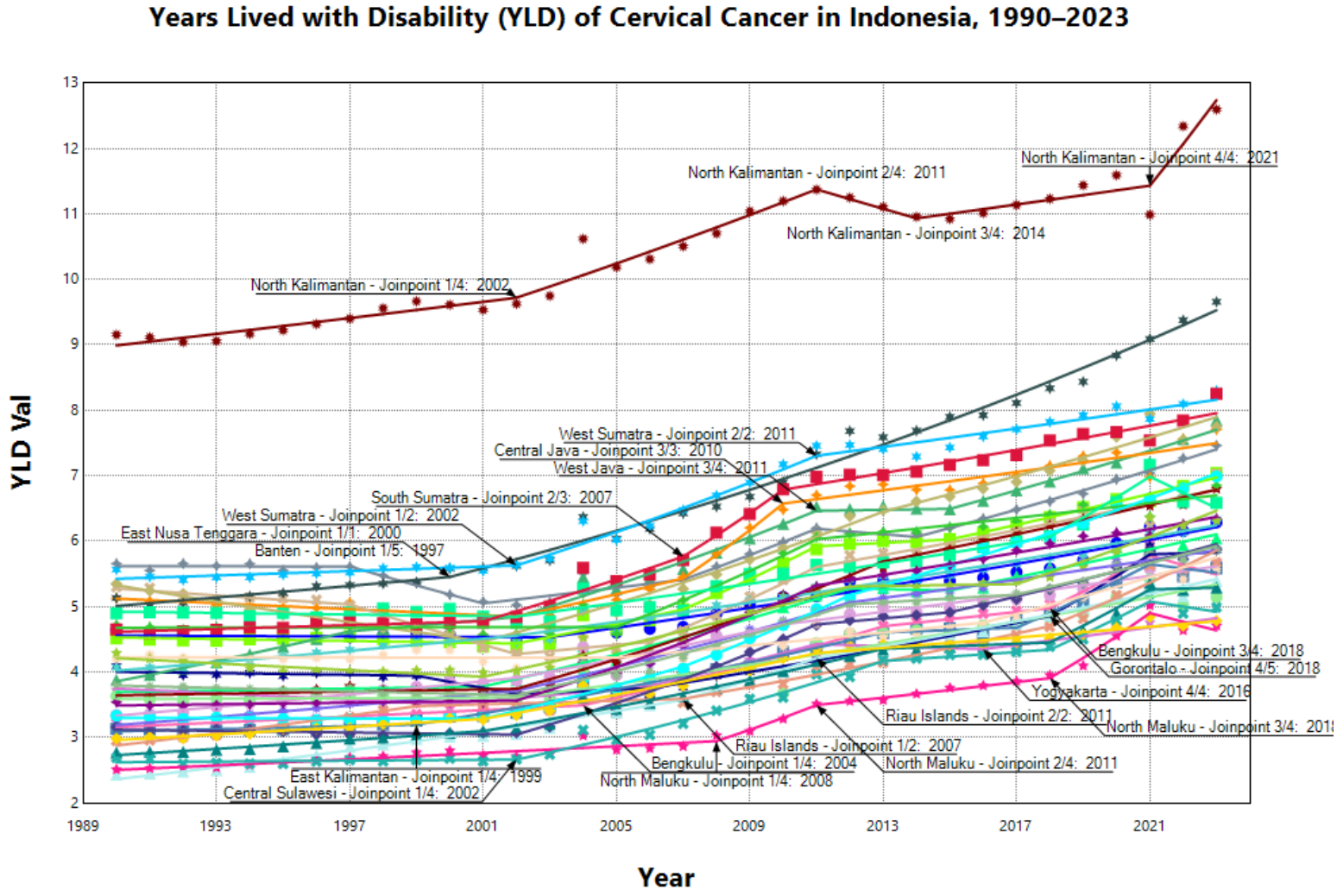
Durbin Watson Test Result for Disability-Adjusted Life Year (DALY)

No	Location	d	dL	dU	4-dL	4-dU
1.	Indonesia	0.398	1.3929	1.5136	2.6071	2.4864
2.	Aceh	0.936	1.3929	1.5136	2.6071	2.4864
3.	Bali	0.375	1.3929	1.5136	2.6071	2.4864
4.	Banten	0.315	1.3929	1.5136	2.6071	2.4864
5.	Bengkulu	1.087	1.3929	1.5136	2.6071	2.4864
6.	Yogyakarta (DIY)	0.310	1.3929	1.5136	2.6071	2.4864
7.	Gorontalo	0.309	1.3929	1.5136	2.6071	2.4864
8.	Jakarta	0.935	1.3929	1.5136	2.6071	2.4864
9.	Jambi	1.550	1.3929	1.5136	2.6071	2.4864
10.	West Java	1.226	1.3929	1.5136	2.6071	2.4864
11.	Central Java	0.202	1.3929	1.5136	2.6071	2.4864
12.	East Java	0.132	1.3929	1.5136	2.6071	2.4864
13.	West Kalimantan	0.327	1.3929	1.5136	2.6071	2.4864
14.	South Kalimantan	0.436	1.3929	1.5136	2.6071	2.4864
15.	Central Kalimantan	1.867	1.3929	1.5136	2.6071	2.4864
16.	East Kalimantan	1.067	1.3929	1.5136	2.6071	2.4864
17.	North Kalimantan	1.245	1.3929	1.5136	2.6071	2.4864
18.	Bangka Belitung Islands	0.956	1.3929	1.5136	2.6071	2.4864
19.	Riau Islands	1.478	1.3929	1.5136	2.6071	2.4864
20.	Lampung	0.350	1.3929	1.5136	2.6071	2.4864
21.	Maluku	0.910	1.3929	1.5136	2.6071	2.4864
22.	North Maluku	0.517	1.3929	1.5136	2.6071	2.4864
23.	West Nusa Tenggara	0.328	1.3929	1.5136	2.6071	2.4864
24.	East Nusa Tenggara	0.668	1.3929	1.5136	2.6071	2.4864
25.	Papua	1.219	1.3929	1.5136	2.6071	2.4864
26.	West Papua	1.256	1.3929	1.5136	2.6071	2.4864
27.	Riau	0.309	1.3929	1.5136	2.6071	2.4864
28.	West Sulawesi	1.023	1.3929	1.5136	2.6071	2.4864
29.	South Sulawesi	0.277	1.3929	1.5136	2.6071	2.4864
30.	Central Sulawesi	0.550	1.3929	1.5136	2.6071	2.4864
31.	Southeast Sulawesi	0.617	1.3929	1.5136	2.6071	2.4864
32.	North Sulawesi	0.758	1.3929	1.5136	2.6071	2.4864
33.	West Sumatra	0.748	1.3929	1.5136	2.6071	2.4864
34.	South Sumatra	0.492	1.3929	1.5136	2.6071	2.4864
35.	North Sumatra	0.541	1.3929	1.5136	2.6071	2.4864

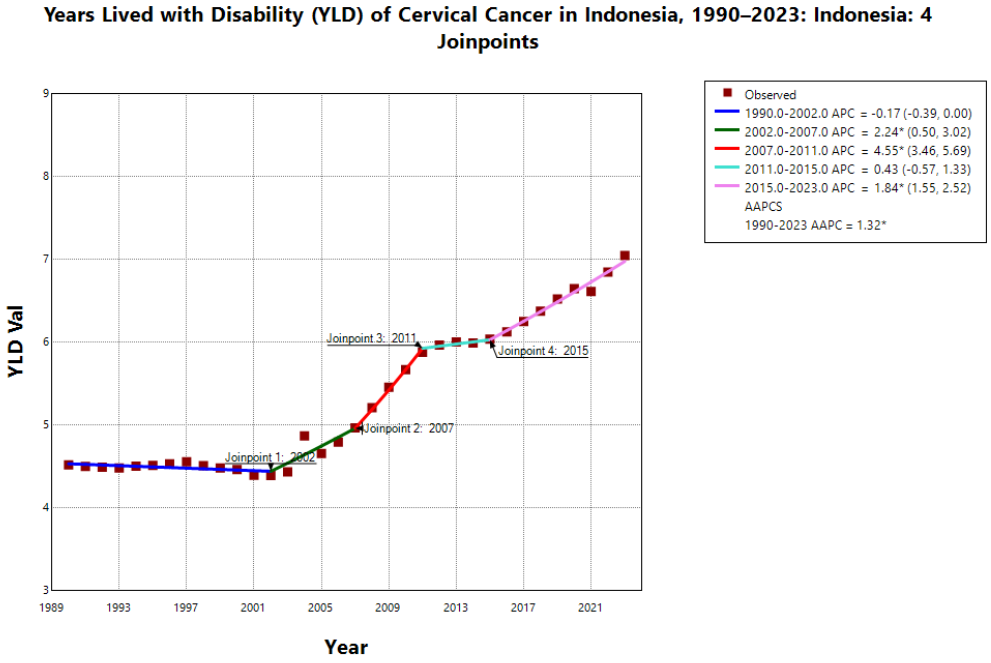
Appendix 2

Joinpoint Regression Results for Years Lived with Disability (YLD) Due to Cervical Cancer, 1990 – 2023

1. YLD of 34 Provinces

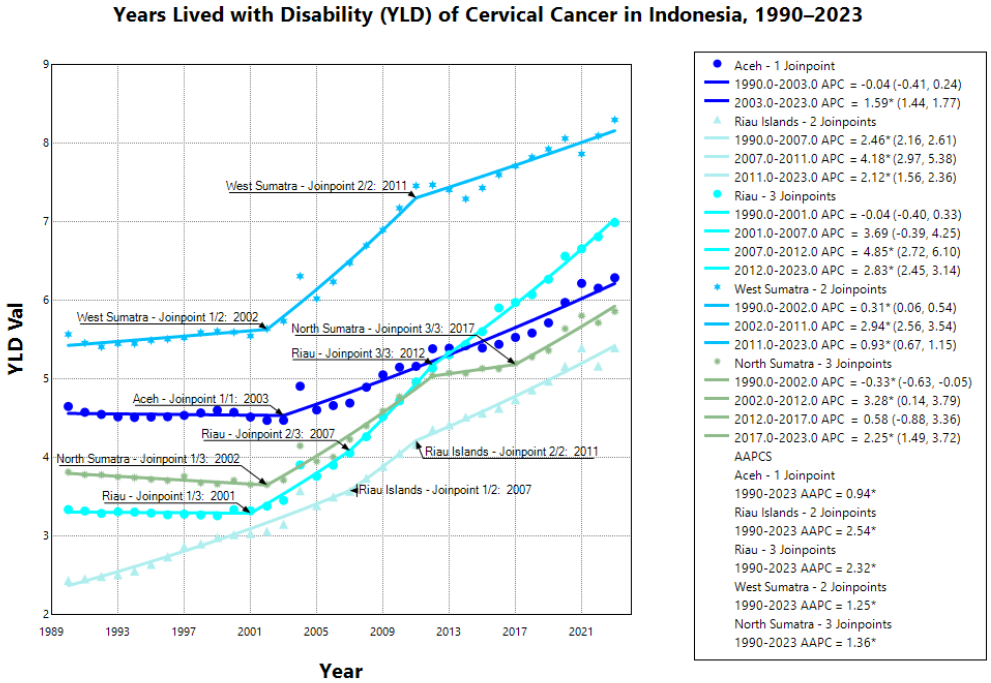


2. YLD of Indonesia (National Level)

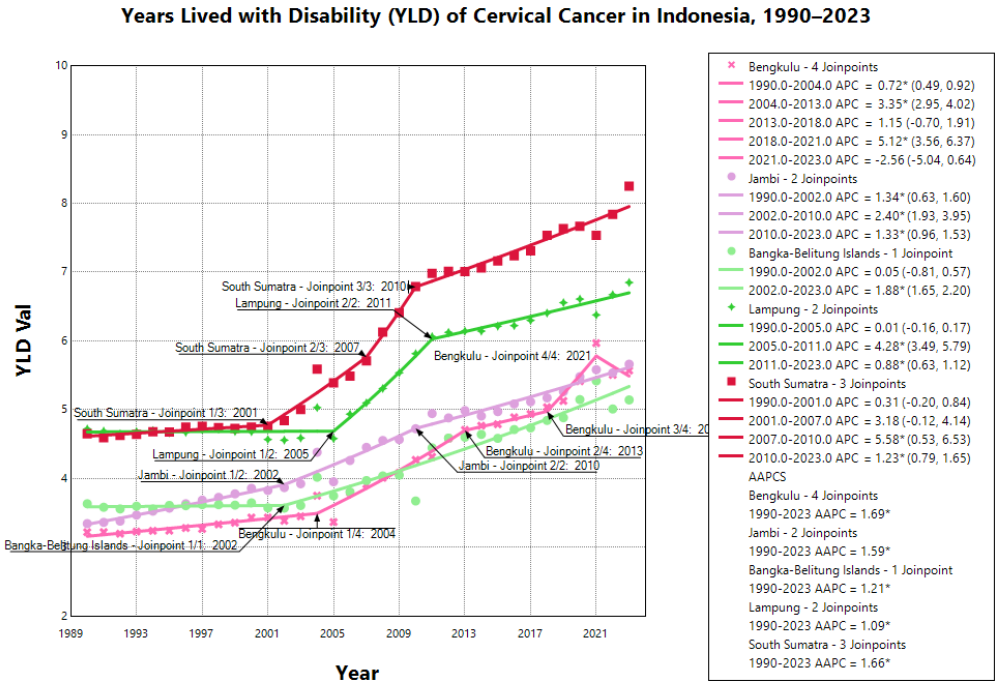


* Indicates that the Annual Percent Change (APC) is significantly different from zero at the alpha = 0.05 level.
Final Selected Model: 4 Joinpoints.

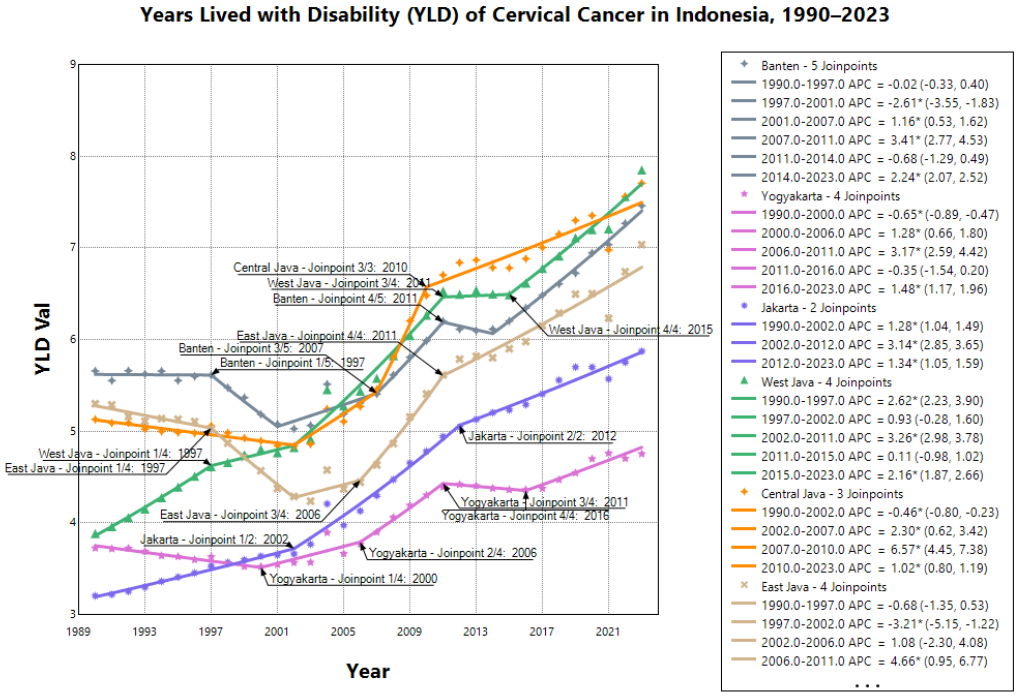
3. YLD of Sumatra I (Aceh, Riau Islands, Riau, North Sumatra, West Sumatra)



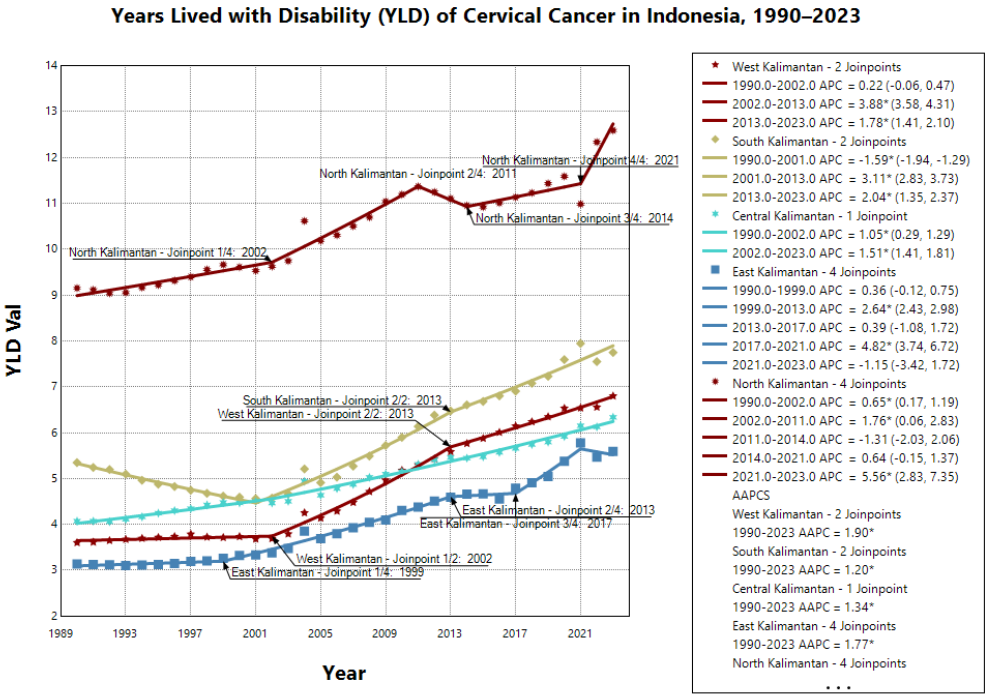
4. YLD of Sumatra II (Bengkulu, Jambi, Bangka Belitung Islands, Lampung, South Sumatra)



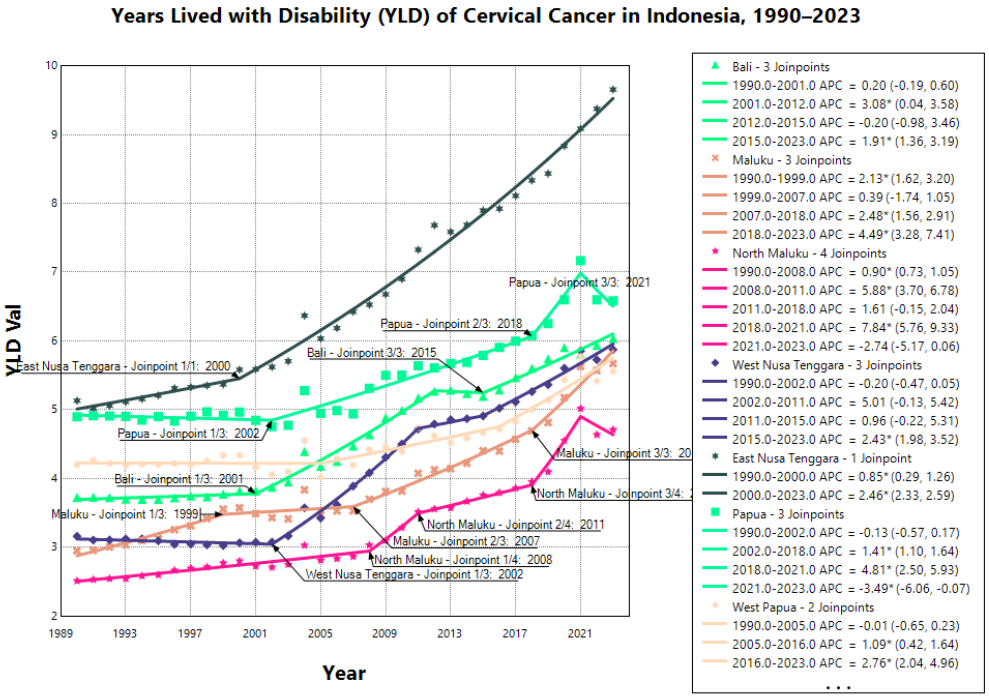
5. YLD of Java (Banten, East Java, West Java, Central Java, Jakarta, DIY or Yogyakarta)



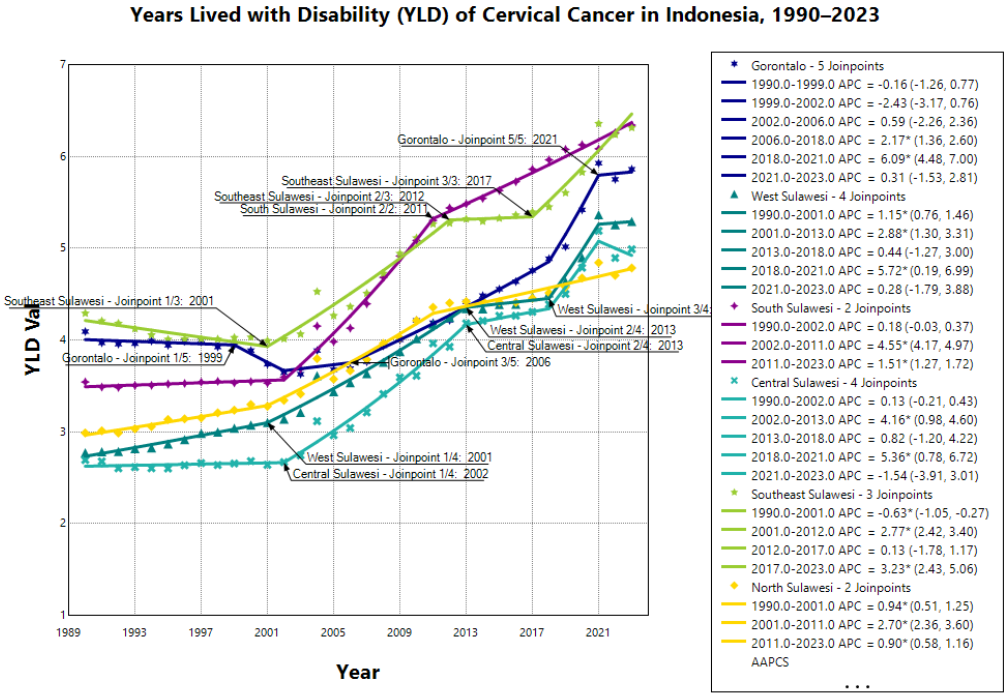
6. YLD of Kalimantan (East Kalimantan, West Kalimantan, South Kalimantan, Central Kalimantan, North Kalimantan)



7. YLD of Bali, Nusa-Tenggara, Maluku, Papua (Bali, West Nusa Tenggara, East Nusa Tenggara, Maluku, North Maluku, Papua, West Papua)

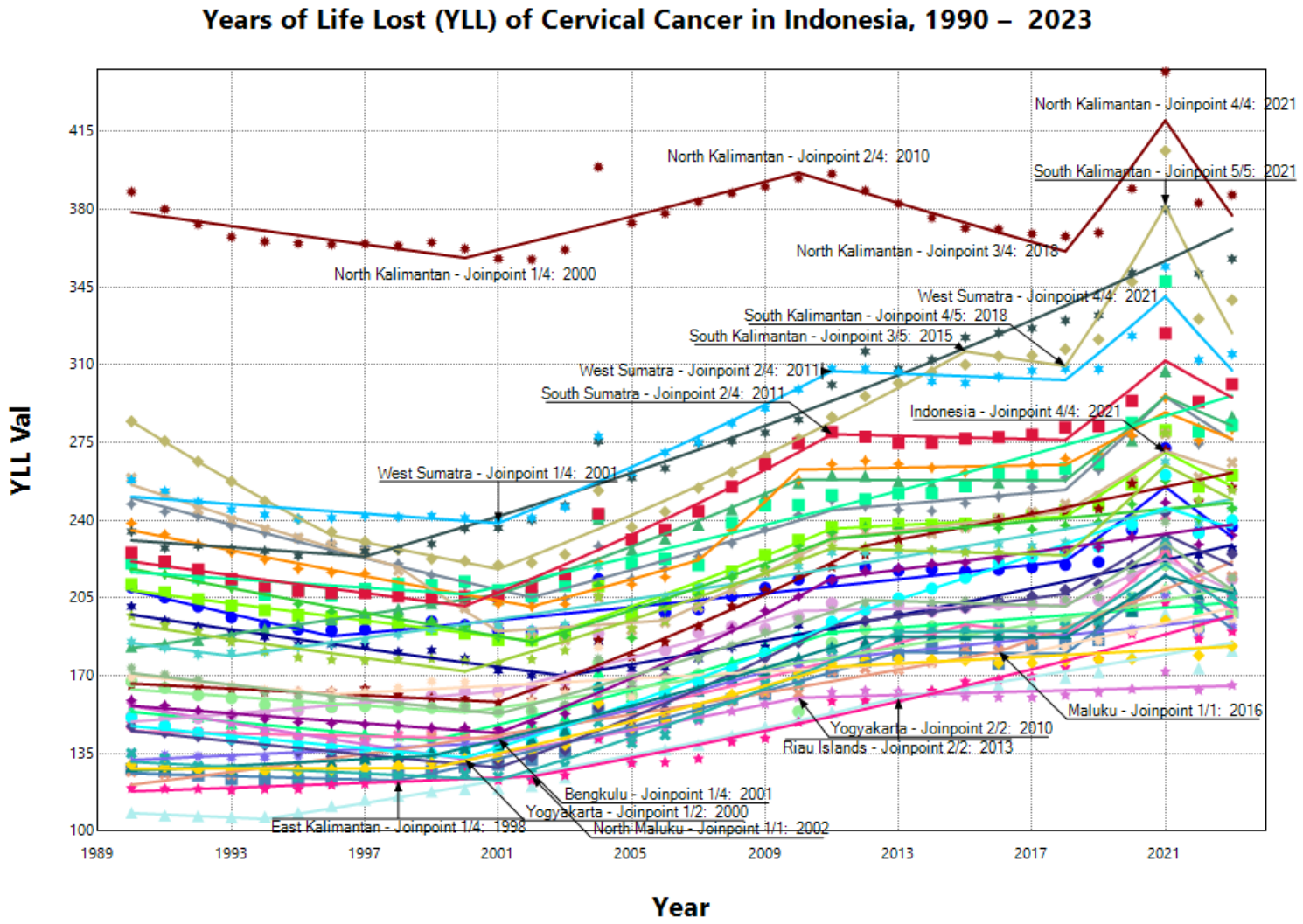


8. YLD of Sulawesi (North Sulawesi, Central Sulawesi, West Sulawesi, Gorontalo, South Sulawesi, Southeast Sulawesi

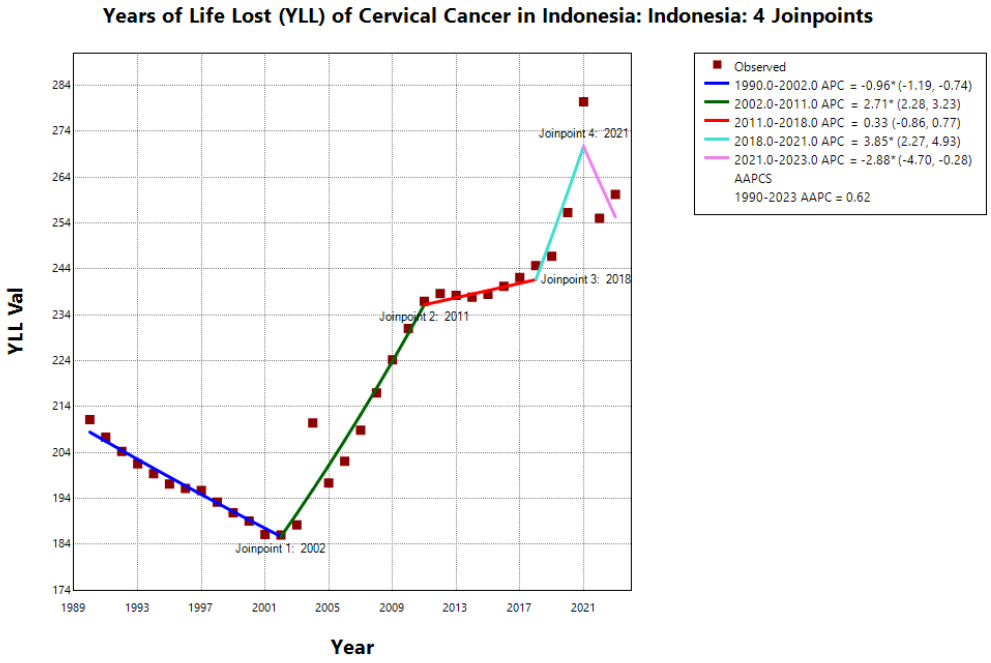


Joinpoint Regression Results for Years of Life Lost (YLL) Due to Cervical Cancer, 1990 – 2023

1. YLL of 34 Provinces

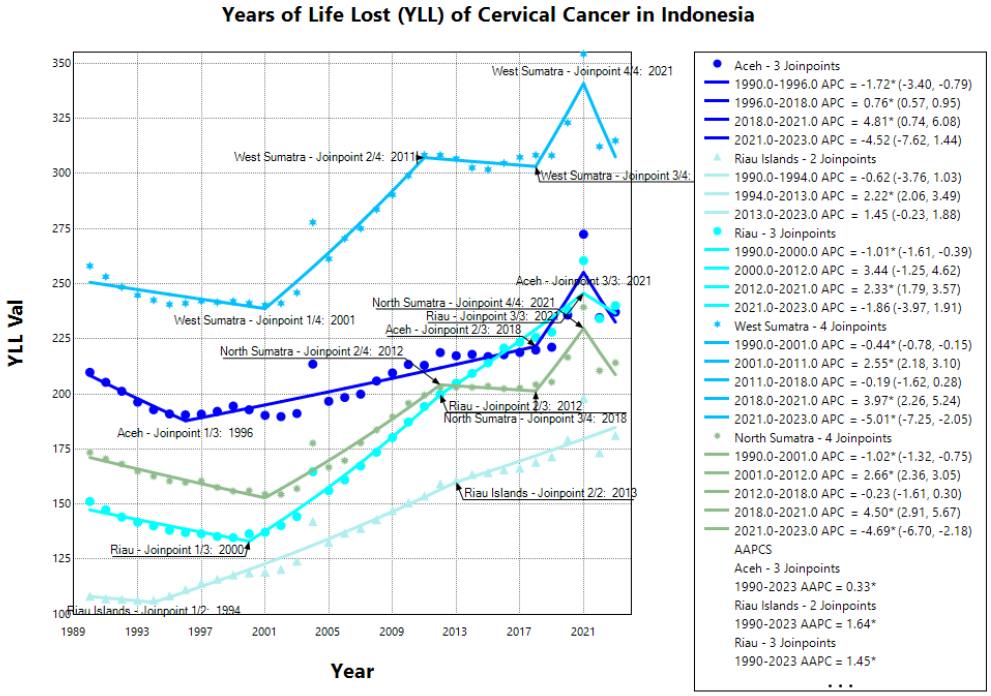


2. YLL of Indonesia (National Level)

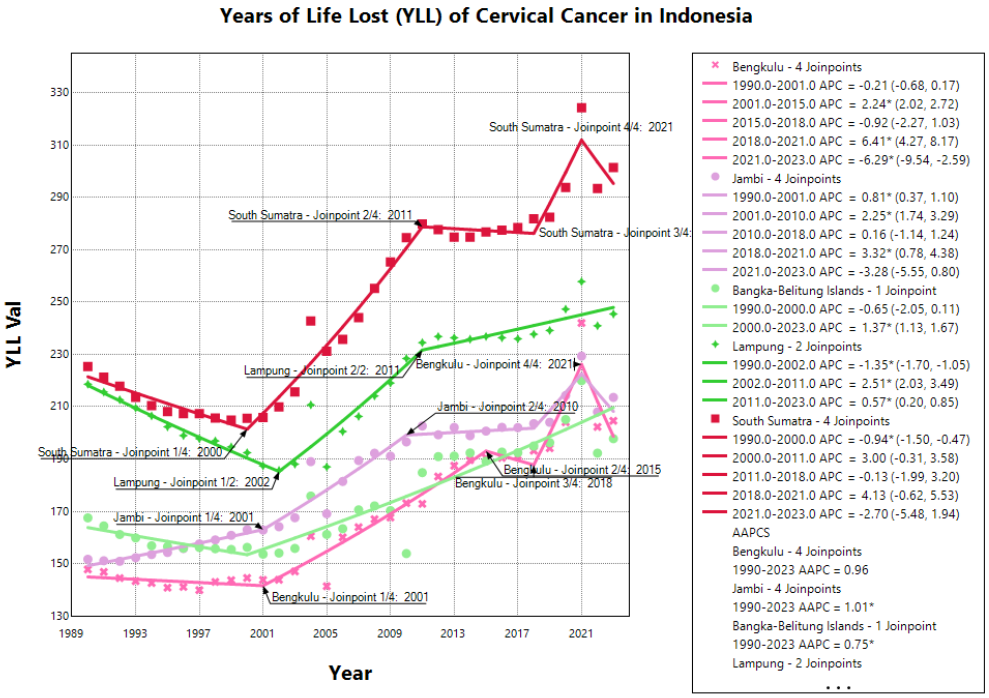


* Indicates that the Annual Percent Change (APC) is significantly different from zero at the alpha = 0.05 level.
Final Selected Model: 4 Joinpoints.

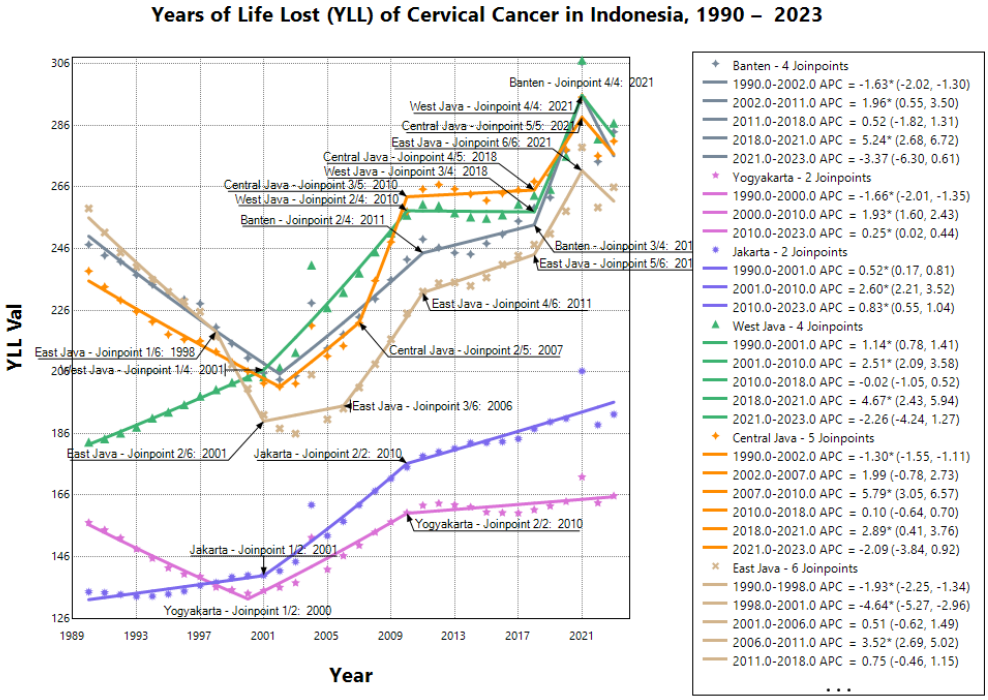
3. YLL of Sumatra I (Aceh, Riau Islands, Riau, North Sumatra, West Sumatra)



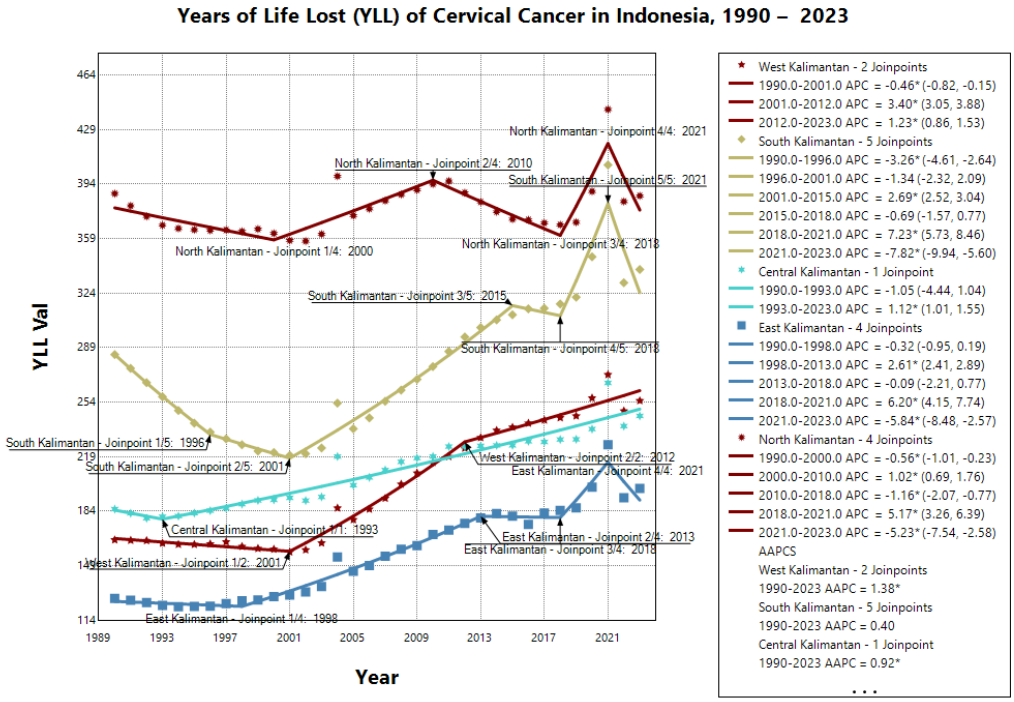
4. YLL of Sumatra II (Bengkulu, Jambi, Bangka Belitung Islands, Lampung, South Sumatra)



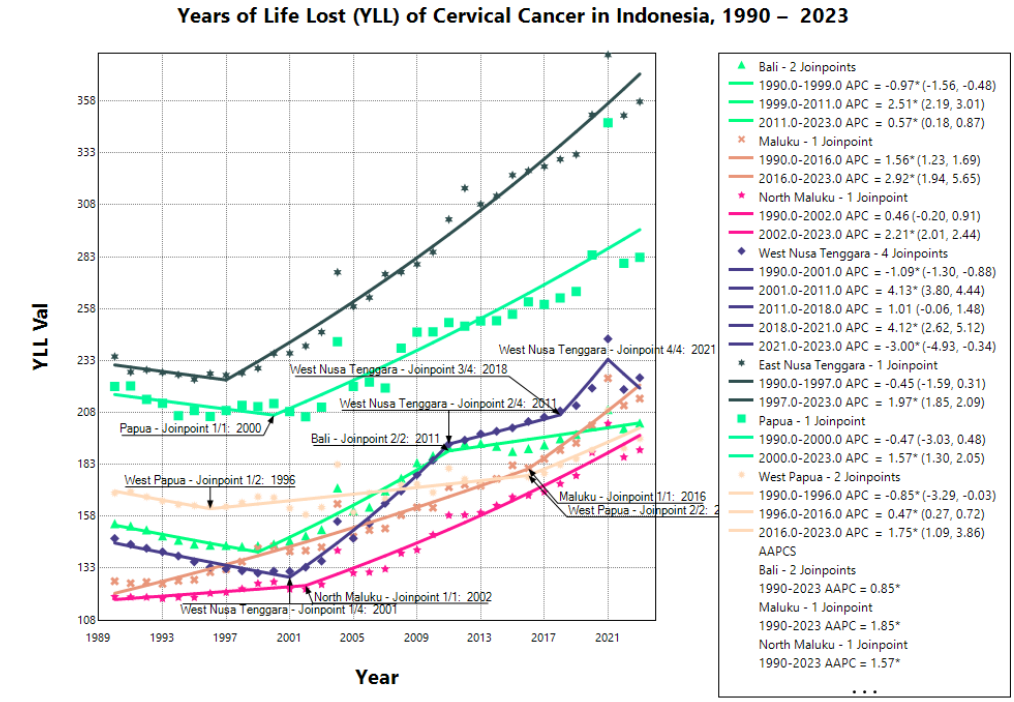
5. YLL of Java (Banten, East Java, West Java, Central Java, Jakarta, DIY or Yogyakarta)



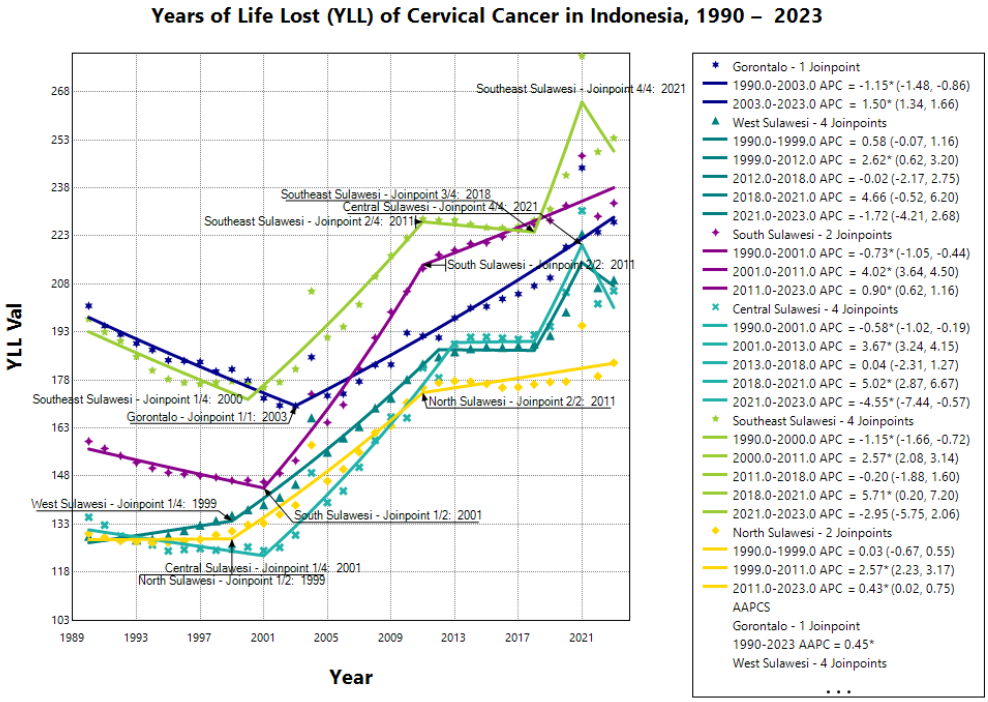
6. YLL of Kalimantan (East Kalimantan, West Kalimantan, South Kalimantan, Central Kalimantan, North Kalimantan)



7. YLL of Bali, Nusa-Tenggara, Maluku, Papua (Bali, West Nusa Tenggara, East Nusa Tenggara, Maluku, North Maluku, Papua, West Papua)

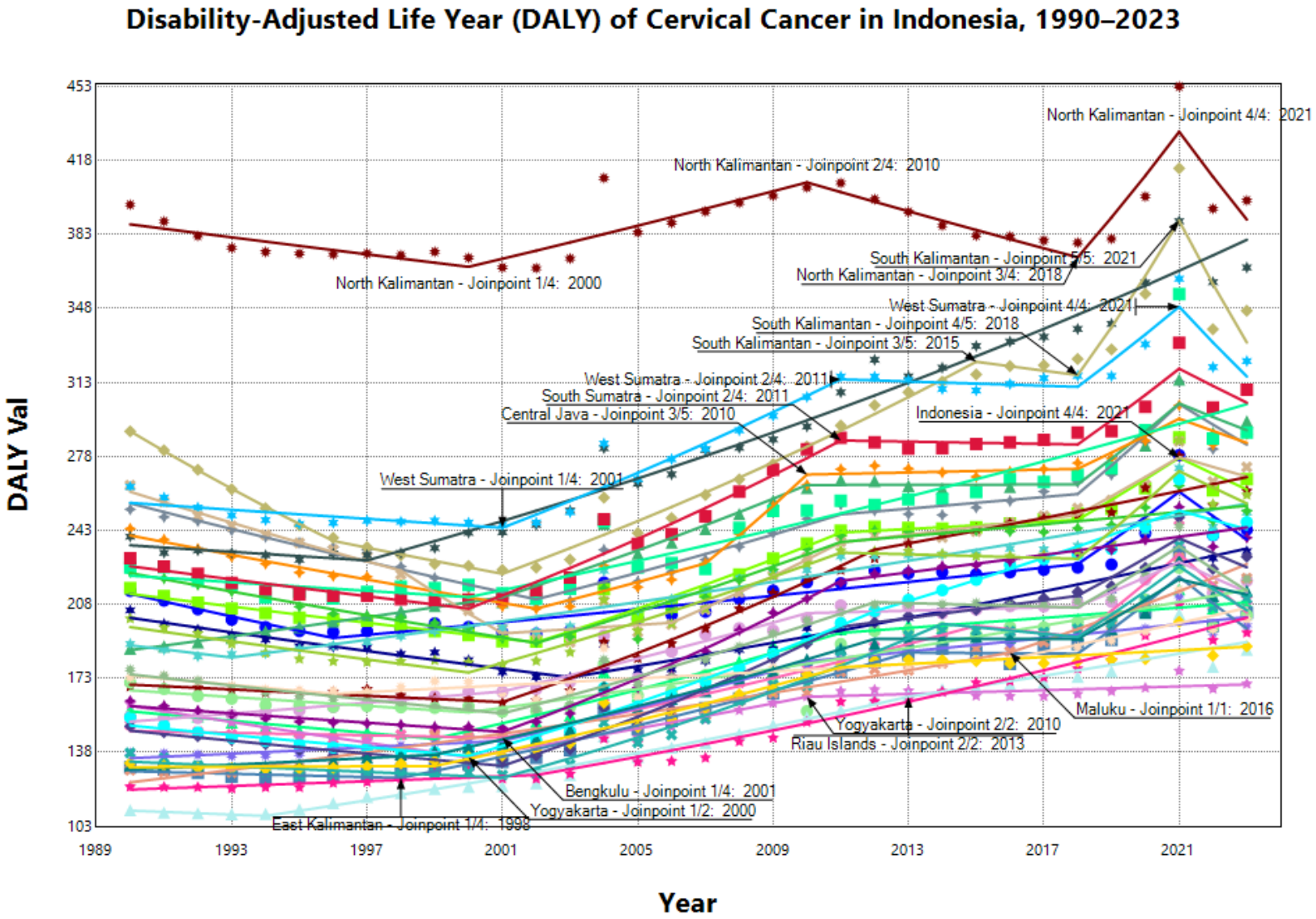


8. YLL of Sulawesi (North Sulawesi, Central Sulawesi, West Sulawesi, Gorontalo, South Sulawesi, Southeast Sulawesi)

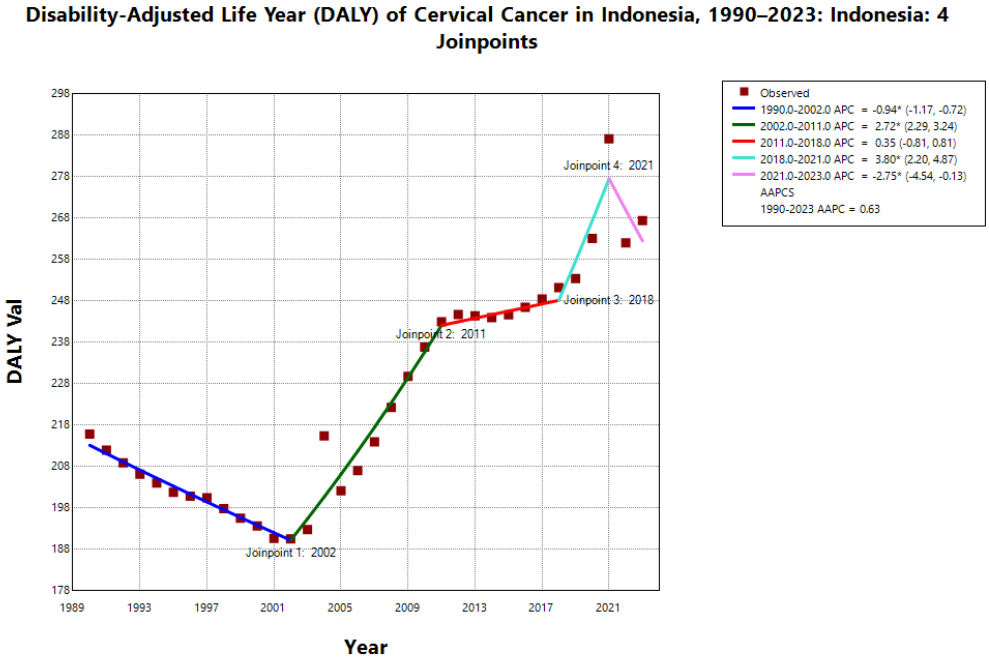


Joinpoint Regression Results for Disability-Adjusted Life Year (DALY) Due to Cervical Cancer, 1990 – 2023

1. DALY of 34 Provinces

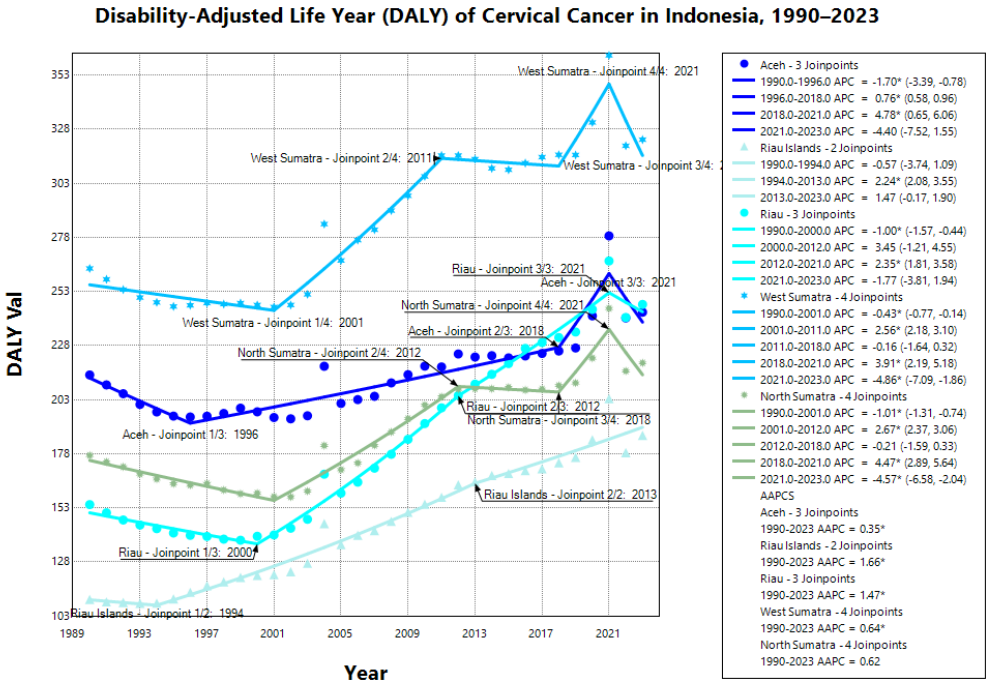


2. DALY of Indonesia (National Level)

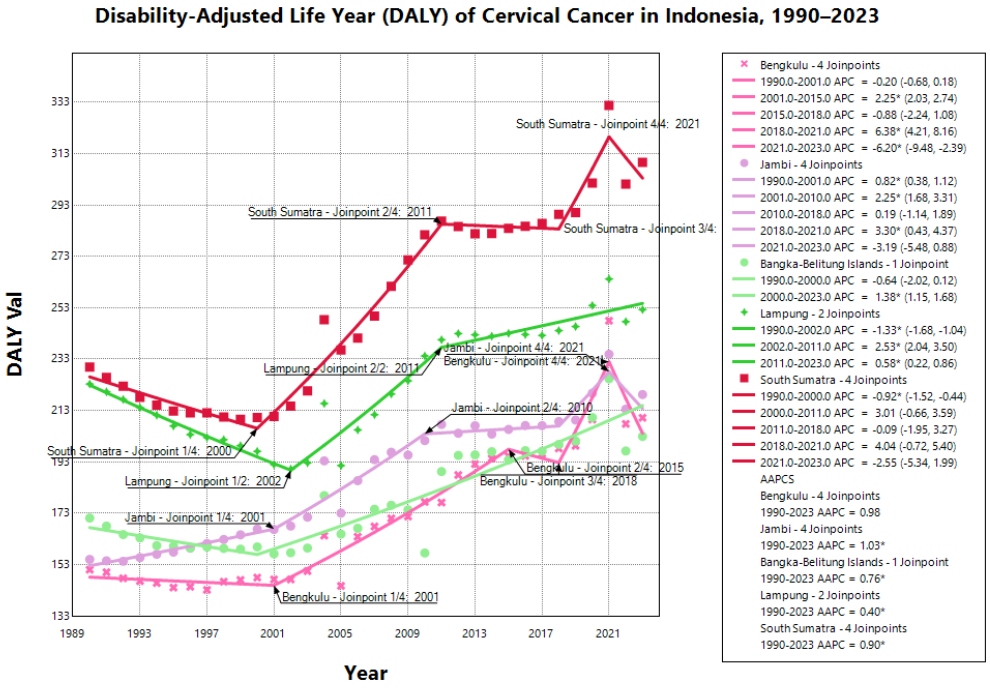


* Indicates that the Annual Percent Change (APC) is significantly different from zero at the alpha = 0.05 level.
Final Selected Model: 4 Joinpoints.

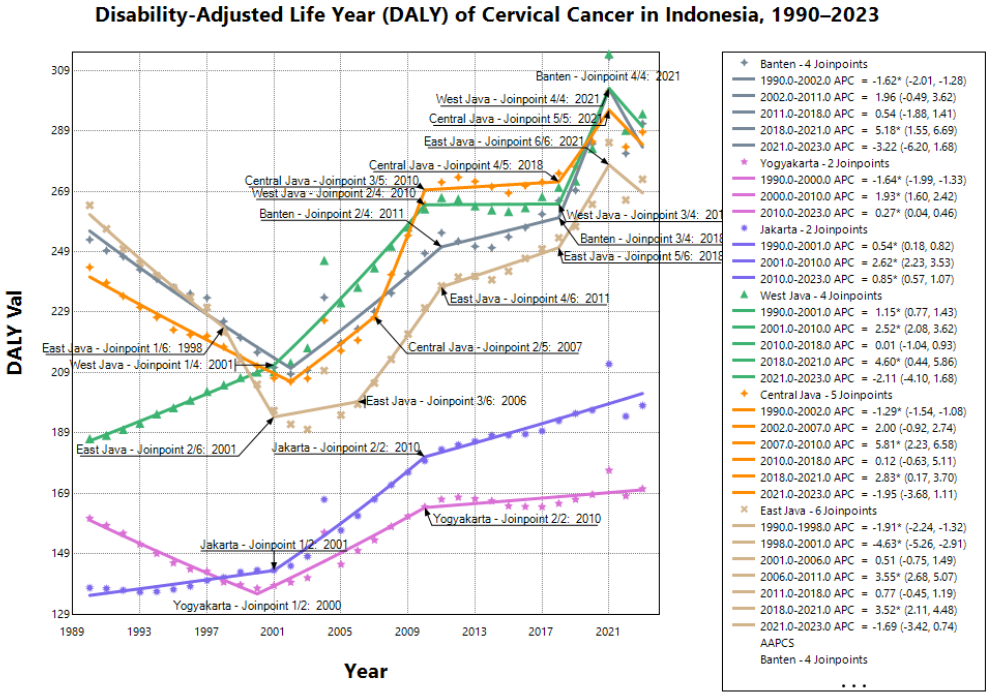
3. DALY of Sumatra I (Aceh, Riau Islands, Riau, North Sumatra, West Sumatra)



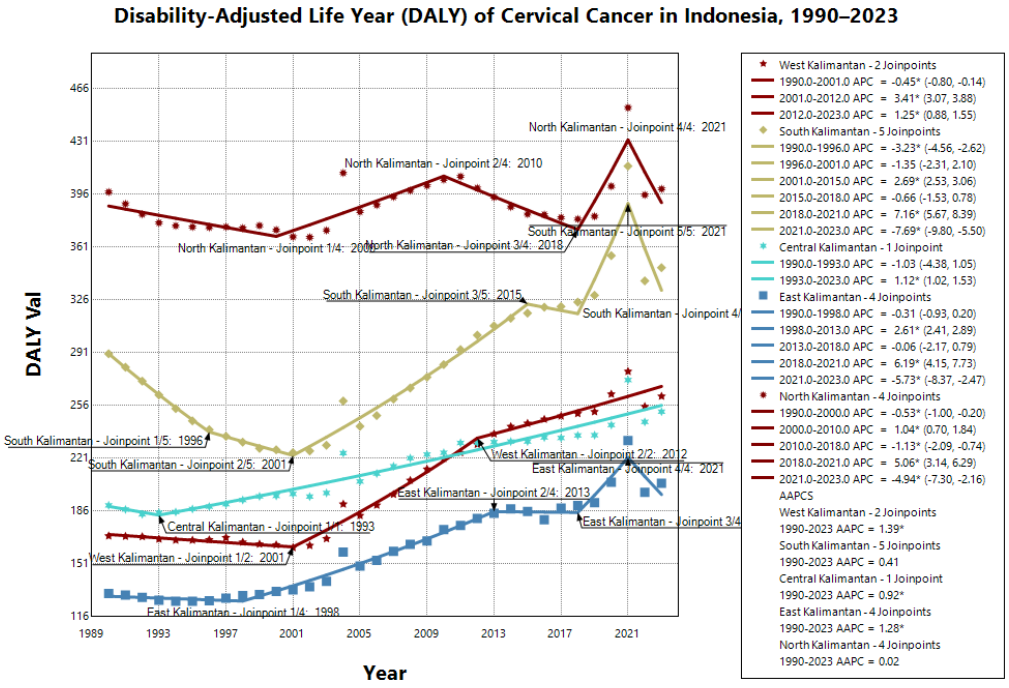
4. DALY of Sumatra II (Bengkulu, Jambi, Bangka Belitung Islands, Lampung, South Sumatra)



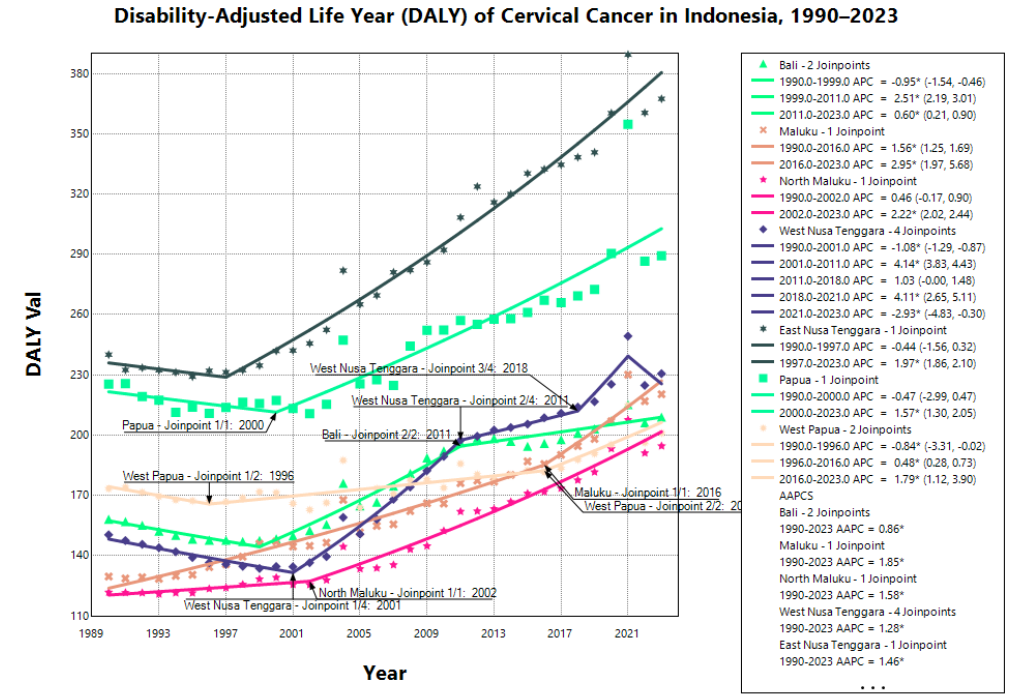
5. DALY of Java (Banten, East Java, West Java, Central Java, Jakarta, DIY or Yogyakarta)



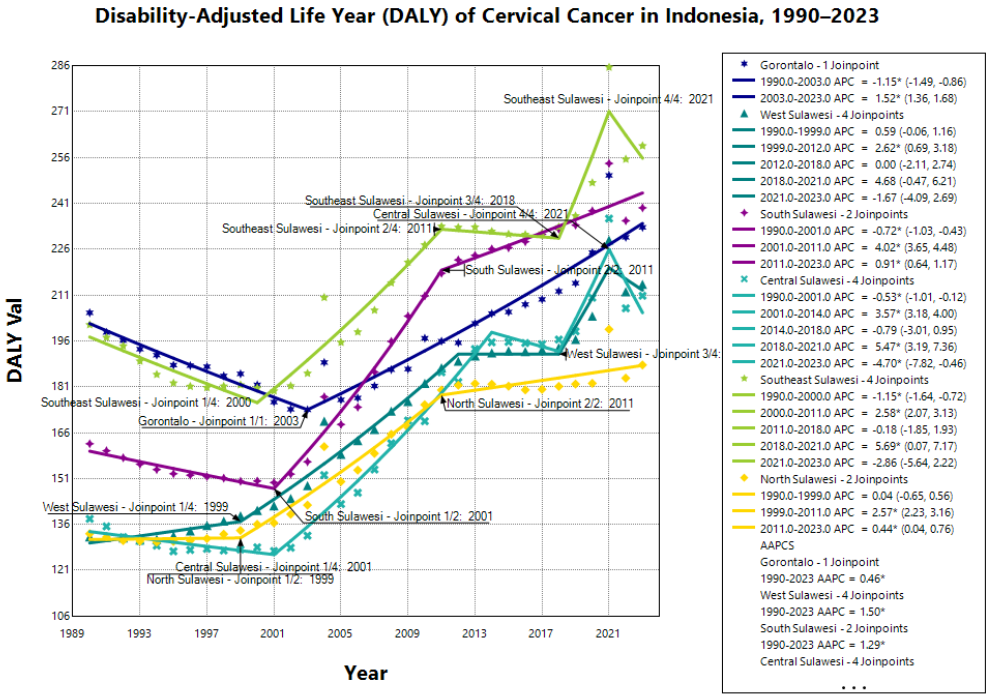
6. DALY of Kalimantan (East Kalimantan, West Kalimantan, South Kalimantan, Central Kalimantan, North Kalimantan)



7. DALY of Bali, Nusa-Tenggara, Maluku, Papua (Bali, West Nusa Tenggara, East Nusa Tenggara, Maluku, North Maluku, Papua, West Papua)



8. DALY of Sulawesi (North Sulawesi, Central Sulawesi, West Sulawesi, Gorontalo, South Sulawesi, Southeast Sulawesi



Appendix 3

Average Annual Percent Change (AAPC) for Years Lived with Disability (YLD) Due to Cervical Cancer, 1990–2023

Cohort	*Range*	*Lower Endpoint*	*Upper Endpoint*	*AAPC*	*Lower CI*	*Upper CI*	*P-Value*
Aceh - 1 Joinpoint	Full Range	1990	2023	0.9432*	0.8562	1.0287	< 0.000001
Bali - 3 Joinpoints	Full Range	1990	2023	1.5330*	1.4438	1.6252	< 0.000001
Banten - 5 Joinpoints	Full Range	1990	2023	0.8395*	0.7903	0.8906	< 0.000001
Bengkulu - 4 Joinpoints	Full Range	1990	2023	1.6880*	1.556	1.7975	< 0.000001
Yogyakarta (DIY) - 4 Joinpoints	Full Range	1990	2023	0.7662*	0.7144	0.8197	< 0.000001
Global - 5 Joinpoints	Full Range	1990	2023	0.1351*	0.1097	0.1569	< 0.000001
Gorontalo - 5 Joinpoints	Full Range	1990	2023	1.1464*	1.0501	1.2571	< 0.000001
Indonesia - 4 Joinpoints	Full Range	1990	2023	1.3165*	1.2614	1.374	< 0.000001
Jakarta - 2 Joinpoints	Full Range	1990	2023	1.8619*	1.797	1.9239	< 0.000001
Jambi - 2 Joinpoints	Full Range	1990	2023	1.5932*	1.4983	1.6638	< 0.000001
West Java (Jawa Barat) - 4 Joinpoints	Full Range	1990	2023	2.1169*	2.0542	2.1942	< 0.000001
Central Java (Jawa Tengah) - 3 Joinpoints	Full Range	1990	2023	1.1609*	1.0933	1.2221	< 0.000001
East Java (Jawa Timur) - 4 Joinpoints	Full Range	1990	2023	0.7663*	0.6672	0.8868	< 0.000001
West Kalimantan (Kalimantan Barat) - 2 Joinpoints	Full Range	1990	2023	1.9020*	1.8248	1.9721	< 0.000001
South Kalimantan (Kalimantan Selatan) - 2 Joinpoints	Full Range	1990	2023	1.1995*	1.1057	1.2787	< 0.000001
Central Kalimantan (Kalimantan Tengah) - 1 Joinpoint	Full Range	1990	2023	1.3421*	1.2667	1.4221	< 0.000001
East Kalimantan (Kalimantan Timur) - 4 Joinpoints	Full Range	1990	2023	1.7676*	1.6515	1.8851	< 0.000001
North Kalimantan (Kalimantan Utara) - 4 Joinpoints	Full Range	1990	2023	1.0616*	0.9486	1.1575	< 0.000001

Cohort	*Range*	*Lower Endpoint*	*Upper Endpoint*	*AAPC*	*Lower CI*	*Upper CI*	*P-Value*
Bangka Belitung Islands (Kepulauan Bangka Belitung) - 1 Joinpoint	Full Range	1990	2023	1.2104*	1.0613	1.3578	< 0.000001
Riau Islands (Kepulauan Riau) - 2 Joinpoints	Full Range	1990	2023	2.5450*	2.4495	2.6117	< 0.000001
Lampung - 2 Joinpoints	Full Range	1990	2023	1.0949*	1.0304	1.1545	< 0.000001
Maluku - 3 Joinpoints	Full Range	1990	2023	2.1776*	2.0479	2.331	< 0.000001
North Maluku (Maluku Utara) - 4 Joinpoints	Full Range	1990	2023	1.8821*	1.7584	2.0023	< 0.000001
West Nusa Tenggara (Nusa Tenggara Barat) - 3 Joinpoints	Full Range	1990	2023	1.9777*	1.9008	2.057	< 0.000001
East Nusa Tenggara (Nusa Tenggara Timur) - 1 Joinpoint	Full Range	1990	2023	1.9667*	1.8773	2.0552	< 0.000001
Papua - 3 Joinpoints	Full Range	1990	2023	0.8492*	0.708	0.9812	< 0.000001
West Papua (Papua Barat) - 2 Joinpoints	Full Range	1990	2023	0.9387*	0.8143	1.0676	< 0.000001
Riau - 3 Joinpoints	Full Range	1990	2023	2.3188*	2.2447	2.3844	< 0.000001
West Sulawesi (Sulawesi Barat) - 4 Joinpoints	Full Range	1990	2023	2.0240*	1.9237	2.1649	< 0.000001
South Sulawesi (Sulawesi Selatan) - 2 Joinpoints	Full Range	1990	2023	1.8404*	1.7808	1.8971	< 0.000001
Central Sulawesi (Sulawesi Tengah) - 4 Joinpoints	Full Range	1990	2023	1.9255*	1.8044	2.0808	< 0.000001
Southeast Sulawesi (Sulawesi Tenggara) - 3 Joinpoints	Full Range	1990	2023	1.3065*	1.2023	1.4214	< 0.000001
North Sulawesi (Sulawesi Utara) - 2 Joinpoints	Full Range	1990	2023	1.4586*	1.3751	1.5356	< 0.000001
West Sumatra (Sumatra Barat) - 2 Joinpoints	Full Range	1990	2023	1.2450*	1.177	1.3093	< 0.000001
South Sumatra (Sumatra Selatan) - 3 Joinpoints	Full Range	1990	2023	1.6636*	1.5697	1.7525	< 0.000001
North Sumatra (Sumatra Utara) - 3 Joinpoints	Full Range	1990	2023	1.3590*	1.2743	1.4531	< 0.000001

*Indicates that the Average Annual Percent Change (AAPC) is significantly different from zero at the alpha = 0.05 level

Average Annual Percent Change (AAPC) for Years of Life Lost (YLL) Due to Cervical Cancer, 1990–2023

Cohort	*Range*	*Lower Endpoint*	*Upper Endpoint*	*AAPC*	*Lower CI*	*Upper CI*	*P-Value*
Aceh - 3 Joinpoints	Full Range	1990	2023	0.3335*	0.154	0.5223	< 0.000001
Bali - 2 Joinpoints	Full Range	1990	2023	0.8457*	0.7456	0.9412	< 0.000001
Banten - 4 Joinpoints	Full Range	1990	2023	0.3011*	0.1294	0.4383	0.0008
Bengkulu - 4 Joinpoints	Full Range	1990	2023	0.9595*	0.7796	1.092	< 0.000001
Yogyakarta (DIY) - 2 Joinpoints	Full Range	1990	2023	0.1706*	0.1028	0.2378	< 0.000001
Global - 6 Joinpoints	Full Range	1990	2023	-0.4033*	-0.4268	-0.3822	< 0.000001
Gorontalo - 1 Joinpoint	Full Range	1990	2023	0.4469*	0.3571	0.5297	< 0.000001
Indonesia - 4 Joinpoints	Full Range	1990	2023	0.6166*	0.5282	0.7417	< 0.000001
Jakarta - 2 Joinpoints	Full Range	1990	2023	1.2066*	1.1295	1.2777	< 0.000001
Jambi - 4 Joinpoints	Full Range	1990	2023	1.0139*	0.8906	1.1375	< 0.000001
West Java (Jawa Barat) - 4 Joinpoints	Full Range	1990	2023	1.3349*	1.2363	1.4841	< 0.000001
Central Java (Jawa Tengah) - 5 Joinpoints	Full Range	1990	2023	0.4894*	0.3993	0.593	< 0.000001
East Java (Jawa Timur) - 6 Joinpoints	Full Range	1990	2023	0.0634	-0.0207	0.17	0.124375
West Kalimantan (Kalimantan Barat) - 2 Joinpoints	Full Range	1990	2023	1.3778*	1.294	1.4576	< 0.000001
South Kalimantan (Kalimantan Selatan) - 5 Joinpoints	Full Range	1990	2023	0.3964*	0.2727	0.5102	< 0.000001
Central Kalimantan (Kalimantan Tengah) - 1 Joinpoint	Full Range	1990	2023	0.9164*	0.7482	1.1145	< 0.000001
East Kalimantan (Kalimantan Timur) - 4 Joinpoints	Full Range	1990	2023	1.2690*	1.1258	1.4096	< 0.000001
North Kalimantan (Kalimantan Utara) - 4 Joinpoints	Full Range	1990	2023	-0.0118	-0.1348	0.1093	0.803439

Cohort	*Range*	*Lower Endpoint*	*Upper Endpoint*	*AAPC*	*Lower CI*	*Upper CI*	*P-Value*
Bangka Belitung Islands (Kepulauan Bangka Belitung) - 1 Joinpoint	Full Range	1990	2023	0.7503*	0.5782	0.9291	< 0.000001
Riau Islands (Kepulauan Riau) - 2 Joinpoints	Full Range	1990	2023	1.6389*	1.4508	1.7817	< 0.000001
Lampung - 2 Joinpoints	Full Range	1990	2023	0.3888*	0.2979	0.4707	< 0.000001
Maluku - 1 Joinpoint	Full Range	1990	2023	1.8478*	1.6719	2.0061	< 0.000001
North Maluku (Maluku Utara) - 1 Joinpoint	Full Range	1990	2023	1.5684*	1.4399	1.6883	< 0.000001
West Nusa Tenggara (Nusa Tenggara Barat) - 4 Joinpoints	Full Range	1990	2023	1.2649*	1.1672	1.3747	< 0.000001
East Nusa Tenggara (Nusa Tenggara Timur) - 1 Joinpoint	Full Range	1990	2023	1.4479*	1.326	1.5576	< 0.000001
Papua - 1 Joinpoint	Full Range	1990	2023	0.9512*	0.7073	1.1827	< 0.000001
West Papua (Papua Barat) - 2 Joinpoints	Full Range	1990	2023	0.5011*	0.3539	0.6457	< 0.000001
Riau - 3 Joinpoints	Full Range	1990	2023	1.4454*	1.3164	1.6364	< 0.000001
West Sulawesi (Sulawesi Barat) - 4 Joinpoints	Full Range	1990	2023	1.4925*	1.3619	1.6857	< 0.000001
South Sulawesi (Sulawesi Selatan) - 2 Joinpoints	Full Range	1990	2023	1.2807*	1.2071	1.3541	< 0.000001
Central Sulawesi (Sulawesi Tengah) - 4 Joinpoints	Full Range	1990	2023	1.2952*	1.1404	1.4577	< 0.000001
Southeast Sulawesi (Sulawesi Tenggara) - 4 Joinpoints	Full Range	1990	2023	0.7800*	0.6327	0.9387	< 0.000001
North Sulawesi (Sulawesi Utara) - 2 Joinpoints	Full Range	1990	2023	1.0912*	0.9788	1.1963	< 0.000001
West Sumatra (Sumatra Barat) - 4 Joinpoints	Full Range	1990	2023	0.6220*	0.5064	0.754	< 0.000001
South Sumatra (Sumatra Selatan) - 4 Joinpoints	Full Range	1990	2023	0.8759*	0.7215	1.0435	< 0.000001
North Sumatra (Sumatra Utara) - 4 Joinpoints	Full Range	1990	2023	0.6034*	0.5003	0.7221	< 0.000001

*Indicates that the Average Annual Percent Change (AAPC) is significantly different from zero at the alpha = 0.05 level

Average Annual Percent Change (AAPC) for Disability-Adjusted Life Year (DALY) Due to Cervical Cancer, 1990–2023

Cohort	*Range*	*Lower Endpoint*	*Upper Endpoint*	*AAPC*	*Lower CI*	*Upper CI*	*P-Value*
Aceh - 3 Joinpoints	Full Range	1990	2023	0.3468*	0.1681	0.5372	< 0.000001
Bali - 2 Joinpoints	Full Range	1990	2023	0.8616*	0.7619	0.9571	< 0.000001
Banten - 4 Joinpoints	Full Range	1990	2023	0.3124*	0.1382	0.4556	0.0008
Bengkulu - 4 Joinpoints	Full Range	1990	2023	0.9759*	0.7932	1.1103	< 0.000001
Yogyakarta (DIY) - 2 Joinpoints	Full Range	1990	2023	0.1840*	0.1166	0.2506	< 0.000001
Global - 6 Joinpoints	Full Range	1990	2023	-0.3888*	-0.4112	-0.3686	< 0.000001
Gorontalo - 1 Joinpoint	Full Range	1990	2023	0.4573*	0.3651	0.5418	< 0.000001
Indonesia - 4 Joinpoints	Full Range	1990	2023	0.6334*	0.5447	0.7573	< 0.000001
Jakarta - 2 Joinpoints	Full Range	1990	2023	1.2242*	1.1475	1.2944	< 0.000001
Jambi - 4 Joinpoints	Full Range	1990	2023	1.0275*	0.9037	1.1544	< 0.000001
West Java (Jawa Barat) - 4 Joinpoints	Full Range	1990	2023	1.3531*	1.255	1.5025	< 0.000001
Central Java (Jawa Tengah) - 5 Joinpoints	Full Range	1990	2023	0.5080*	0.4187	0.614	< 0.000001
East Java (Jawa Timur) - 6 Joinpoints	Full Range	1990	2023	0.0817	-0.0034	0.1892	0.055189
West Kalimantan (Kalimantan Barat) - 2 Joinpoints	Full Range	1990	2023	1.3900*	1.3069	1.4688	< 0.000001
South Kalimantan (Kalimantan Selatan) - 5 Joinpoints	Full Range	1990	2023	0.4102*	0.2875	0.5241	< 0.000001
Central Kalimantan (Kalimantan Tengah) - 1 Joinpoint	Full Range	1990	2023	0.9246*	0.76	1.1202	< 0.000001
East Kalimantan (Kalimantan Timur) - 4 Joinpoints	Full Range	1990	2023	1.2812*	1.1379	1.4211	< 0.000001
North Kalimantan (Kalimantan Utara) - 4 Joinpoints	Full Range	1990	2023	0.0175	-0.1087	0.1376	0.74945

Cohort	*Range*	*Lower Endpoint*	*Upper Endpoint*	*AAPC*	*Lower CI*	*Upper CI*	*P-Value*
Bangka Belitung Islands (Kepulauan Bangka Belitung) - 1 Joinpoint	Full Range	1990	2023	0.7597*	0.5883	0.9377	< 0.000001
Riau Islands (Kepulauan Riau) - 2 Joinpoints	Full Range	1990	2023	1.6599*	1.4717	1.8034	< 0.000001
Lampung - 2 Joinpoints	Full Range	1990	2023	0.4050*	0.3147	0.4867	< 0.000001
Maluku - 1 Joinpoint	Full Range	1990	2023	1.8542*	1.6793	2.0075	< 0.000001
North Maluku (Maluku Utara) - 1 Joinpoint	Full Range	1990	2023	1.5752*	1.4483	1.6924	< 0.000001
West Nusa Tenggara (Nusa Tenggara Barat) - 4 Joinpoints	Full Range	1990	2023	1.2789*	1.1821	1.3867	< 0.000001
East Nusa Tenggara (Nusa Tenggara Timur) - 1 Joinpoint	Full Range	1990	2023	1.4583*	1.3381	1.5665	< 0.000001
Papua - 1 Joinpoint	Full Range	1990	2023	0.9500*	0.7103	1.1814	< 0.000001
West Papua (Papua Barat) - 2 Joinpoints	Full Range	1990	2023	0.5123*	0.3651	0.6551	< 0.000001
Riau - 3 Joinpoints	Full Range	1990	2023	1.4653*	1.3407	1.6513	< 0.000001
West Sulawesi (Sulawesi Barat) - 4 Joinpoints	Full Range	1990	2023	1.5042*	1.3765	1.6958	< 0.000001
South Sulawesi (Sulawesi Selatan) - 2 Joinpoints	Full Range	1990	2023	1.2936*	1.2225	1.3652	< 0.000001
Central Sulawesi (Sulawesi Tengah) - 4 Joinpoints	Full Range	1990	2023	1.3085*	1.1358	1.4717	< 0.000001
Southeast Sulawesi (Sulawesi Tenggara) - 4 Joinpoints	Full Range	1990	2023	0.7899*	0.6435	0.9492	< 0.000001
North Sulawesi (Sulawesi Utara) - 2 Joinpoints	Full Range	1990	2023	1.0998*	0.9881	1.2034	< 0.000001
West Sumatra (Sumatra Barat) - 4 Joinpoints	Full Range	1990	2023	0.6370*	0.5213	0.7698	< 0.000001
South Sunatra (Sumatra Selatan) - 4 Joinpoints	Full Range	1990	2023	0.8956*	0.7413	1.0679	< 0.000001
North Sumatra (Sumatra Utara) - 4 Joinpoints	Full Range	1990	2023	0.6195*	0.5159	0.7364	< 0.000001

*Indicates that the Average Annual Percent Change (AAPC) is significantly different from zero at the alpha = 0.05 level

Appendix 4

Neighborhood Relationships Among Provinces in Indonesia Based on a Modified Spatial Weight Matrix (Queen Contiguity and KNN, k = 1)



No ID	Province	Neighbor
1	Aceh	North Sumatra (34)
2	Bali	West Nusa Tenggara (22)
3	Banten	Jakarta (7), West Java (9)
4	Bengkulu	Lampung (19), Jambi (8), South Sumatra (33), West Sumatra (32)
5	Yogyakarta (DIY)	Central Java (10)
6	Gorontalo	North Sulawesi (31), Central Sulawesi (29)
7	Jakarta	Banten (3), West Java (9)
8	Jambi	South Sumatra (33), West Sumatra (32), Bengkulu (4), Riau (26)
9	West Java	Jakarta (7), Central Java (10), Banten (3)
10	Central Java	Yogyakarta [DIY] (5), West Java (9), East Java (11)
11	East Java	Central Java (10)
12	West Kalimantan	Central Kalimantan (14), East Kalimantan (15)
13	South Kalimantan	Central Kalimantan (14), East Kalimantan (15)
14	Central Kalimantan	East Kalimantan (15), West Kalimantan (12), South Kalimantan (13)
15	East Kalimantan	Central Kalimantan (14), North Kalimantan (16), West Kalimantan (12), South Kalimantan (13)
16	North Kalimantan	East Kalimantan (15)

17	Bangka Belitung Islands	South Sumatra (33)
18	Riau Islands	Riau (26)
19	Lampung	South Sumatra (33), Bengkulu (4)
20	Maluku	West Papua (25)
21	North Maluku	North Sulawesi (31)
22	West Nusa Tenggara	Bali (2)
23	East Nusa Tenggara	West Nusa Tenggara (22)
24	Papua	West Papua (25)
25	West Papua	Papua (24)
26	Riau	Jambi (8), West Sumatra (32), North Sumatra (34)
27	West Sulawesi	South Sulawesi (28), Central Sulawesi (29)
28	South Sulawesi	Central Sulawesi (29), West Sulawesi (27), Southeast Sulawesi (30)
29	Central Sulawesi	South Sulawesi (28), Gorontalo (6), West Sulawesi (27), Southeast Sulawesi (30)
30	Southeast Sulawesi	Central Sulawesi (29), South Sulawesi (28)
31	North Sulawesi	Gorontalo (6)
32	West Sumatra	Jambi (8), North Sumatra (34), Bengkulu (4), Riau (26)
33	South Sumatra	Lampung (19), Jambi (8), Bengkulu (4)
34	North Sumatra	Aceh (1), Riau (26), West Sumatra (32)

Appendix 5

LISA Statistics, Cluster Classification, and Significance Levels for Years Lived with Disability (YLD) Due to Cervical Cancer Across 34 Provinces

1. **1990 (YLD)**

No	Province	LISA-I	LISA-CL	LISA-P	Significant ($\alpha = 0.05$)
1	Aceh	-0.091502	0	0.470000	Not significant
2	Bali	0.193743	0	0.218000	Not significant
3	Banten	-0.512372	0	0.291000	Not significant
4	Bengkulu	-0.258099	0	0.180000	Not significant
5	Yogyakarta (DIY)	-0.225248	0	0.188000	Not significant
6	Gorontalo	-0.013944	4	0.031000	Significant
7	Jakarta	-0.369300	0	0.155000	Not significant
8	Jambi	-0.052832	0	0.357000	Not significant
9	West Java	-0.068535	0	0.166000	Not significant
10	Central Java	0.145736	0	0.282000	Not significant
11	East Java	0.785249	0	0.179000	Not significant
12	West Kalimantan	0.135495	0	0.303000	Not significant
13	South Kalimantan	-0.365681	0	0.321000	Not significant
14	Central Kalimantan	0.000093	0	0.470000	Not significant
15	East Kalimantan	-0.840450	3	0.031000	Significant
16	North Kalimantan	-2.904951	0	0.182000	Not significant
17	Bangka Belitung Islands	-0.154929	0	0.270000	Not significant
18	Riau Islands	0.739155	0	0.306000	Not significant
19	Lampung	-0.054311	0	0.485000	Not significant
20	Maluku	-0.085856	0	0.374000	Not significant
21	North Maluku	1.033701	0	0.164000	Not significant
22	West Nusa Tenggara	0.193743	0	0.491000	Not significant

No	Province	LISA-I	LISA-CL	LISA-P	Significant (α = 0.05)
23	East Nusa Tenggara	-0.588370	0	0.213000	Not significant
24	Papua	0.063023	0	0.373000	Not significant
25	West Papua	0.063023	0	0.243000	Not significant
26	Riau	-0.075176	0	0.344000	Not significant
27	West Sulawesi	0.758795	0	0.086000	Not significant
28	South Sulawesi	0.266056	0	0.076000	Not significant
29	Central Sulawesi	0.336198	0	0.231000	Not significant
30	Southeast Sulawesi	-0.126817	0	0.115000	Not significant
31	North Sulawesi	-0.012277	0	0.394000	Not significant
32	West Sumatra	-0.586887	0	0.111000	Not significant
33	South Sumatra	-0.109648	0	0.374000	Not significant
34	North Sumatra	-0.070477	0	0.209000	Not significant

LISA-CL : *Cluster*

LISA-I : Moran's I value

LISA-P : Significant value

2. 2007 (YLD)

No	Province	LISA-I	LISA-CL	LISA-P	Significant (α = 0.05)
1	Aceh	-0.009739981	0	0.423	Not significant
2	Bali	0.075595428	0	0.225	Not significant
3	Banten	0.121699055	0	0.245	Not significant
4	Bengkulu	-0.324903519	0	0.123	Not significant
5	Yogyakarta (DIY)	-0.341446297	0	0.161	Not significant
6	Gorontalo	0.573657445	2	0.033	Significant
7	Jakarta	-0.16747536	0	0.125	Not significant
8	Jambi	-0.042882434	0	0.189	Not significant
9	West Java	0.20967806	0	0.176	Not significant
10	Central Java	0.023035706	0	0.34	Not significant
11	East Java	-0.009019164	0	0.16	Not significant
12	West Kalimantan	0.024276583	0	0.443	Not significant
13	South Kalimantan	-0.087930975	0	0.48	Not significant
14	Central Kalimantan	-0.011495233	0	0.451	Not significant
15	East Kalimantan	-0.66596243	3	0.024	Significant
16	North Kalimantan	-2.390161151	0	0.309	Not significant
17	Bangka Belitung Islands	-0.405061197	0	0.088	Not significant
18	Riau Islands	0.36287742	0	0.368	Not significant
19	Lampung	0.041199197	0	0.292	Not significant
20	Maluku	0.284320817	0	0.39	Not significant
21	North Maluku	0.863794572	0	0.187	Not significant
22	West Nusa Tenggara	0.075595428	0	0.478	Not significant
23	East Nusa Tenggara	-0.760150913	0	0.23	Not significant
24	Papua	-0.073770868	0	0.382	Not significant
25	West Papua	-0.073770868	0	0.277	Not significant
26	Riau	-0.13491941	0	0.21	Not significant

No	Province	LISA-I	LISA-CL	LISA-P	Significant (α = 0.05)
27	West Sulawesi	0.484779646	0	0.084	Not significant
28	South Sulawesi	0.124473788	0	0.059	Not significant
29	Central Sulawesi	0.465656823	0	0.091	Not significant
30	Southeast Sulawesi	0.067407809	0	0.123	Not significant
31	North Sulawesi	0.429387946	0	0.199	Not significant
32	West Sumatra	-0.500747628	0	0.211	Not significant
33	South Sumatra	-0.095693857	0	0.47	Not significant
34	North Sumatra	-0.100720648	0	0.198	Not significant

LISA-CL : *Cluster*

LISA-I : Moran's I value

LISA-P : Significant value

3. **2023 (YLD)**

No	Province	LISA-I	LISA-CL	LISA-P	Significant (α = 0.05)
1	Aceh	0.062728	0	0.388000	Not significant
2	Bali	0.125520	0	0.457000	Not significant
3	Banten	0.128737	0	0.265000	Not significant
4	Bengkulu	-0.285529	0	0.167000	Not significant
5	Yogyakarta (DIY)	-0.845725	0	0.191000	Not significant
6	Gorontalo	0.434454	2	0.008000	Significant
7	Jakarta	-0.297504	0	0.139000	Not significant
8	Jambi	-0.261870	0	0.155000	Not significant
9	West Java	0.263537	0	0.204000	Not significant
10	Central Java	0.011839	0	0.401000	Not significant
11	East Java	0.245813	0	0.219000	Not significant
12	West Kalimantan	-0.062871	0	0.341000	Not significant
13	South Kalimantan	-0.276907	0	0.342000	Not significant
14	Central Kalimantan	-0.014304	0	0.339000	Not significant
15	East Kalimantan	-0.695561	3	0.019000	Significant
16	North Kalimantan	-2.285454	0	0.260000	Not significant
17	Bangka Belitung Islands	-0.961628	0	0.088000	Not significant
18	Riau Islands	-0.212604	0	0.278000	Not significant
19	Lampung	0.051582	0	0.278000	Not significant
20	Maluku	0.330372	0	0.251000	Not significant
21	North Maluku	1.268567	0	0.067000	Not significant
22	West Nusa Tenggara	0.125520	0	0.464000	Not significant
23	East Nusa Tenggara	-0.816923	0	0.449000	Not significant
24	Papua	-0.024724	0	0.213000	Not significant
25	West Papua	-0.024724	0	0.369000	Not significant
26	Riau	0.015967	0	0.356000	Not significant

No	Province	LISA-I	LISA-CL	LISA-P	Significant (α = 0.05)
27	West Sulawesi	0.423827	0	0.192000	Not significant
28	South Sulawesi	0.071151	0	0.085000	Not significant
29	Central Sulawesi	0.351106	0	0.190000	Not significant
30	Southeast Sulawesi	0.071259	0	0.217000	Not significant
31	North Sulawesi	0.461590	0	0.388000	Not significant
32	West Sumatra	-0.359689	0	0.297000	Not significant
33	South Sumatra	-0.344575	0	0.353000	Not significant
34	North Sumatra	-0.179460	0	0.196000	Not significant

LISA-CL : *Cluster*

LISA-I : Moran's I value

LISA-P : Significant value

LISA Statistics, Cluster Classification, and Significance Levels for Years of Life Lost (YLL) Due to Cervical Cancer Across 34 Provinces

1. **1990 (YLL)**

No	Province	LISA-I	LISA-CL	LISA-P	Significant ($\alpha = 0.05$)
1	Aceh	-0.085719	0	0.452000	Not significant
2	Bali	0.346660	0	0.251000	Not significant
3	Banten	-0.481167	0	0.285000	Not significant
4	Bengkulu	-0.307840	0	0.158000	Not significant
5	Yogyakarta (DIY)	-0.443179	0	0.157000	Not significant
6	Gorontalo	-0.242652	0	0.060000	Not significant
7	Jakarta	-0.444067	0	0.208000	Not significant
8	Jambi	-0.099881	0	0.327000	Not significant
9	West Java	-0.014066	0	0.228000	Not significant
10	Central Java	0.222591	0	0.263000	Not significant
11	East Java	1.145977	0	0.147000	Not significant
12	West Kalimantan	0.168608	0	0.257000	Not significant
13	South Kalimantan	-0.837765	0	0.273000	Not significant
14	Central Kalimantan	-0.000407	0	0.378000	Not significant
15	East Kalimantan	-1.185989	3	0.024000	Significant
16	North Kalimantan	-3.413413	0	0.074000	Not significant
17	Bangka Belitung Islands	-0.209304	0	0.209000	Not significant
18	Riau Islands	0.775337	0	0.306000	Not significant
19	Lampung	0.010430	0	0.417000	Not significant
20	Maluku	0.279945	0	0.487000	Not significant
21	North Maluku	1.075011	0	0.144000	Not significant
22	West Nusa Tenggara	0.346660	0	0.364000	Not significant
23	East Nusa Tenggara	-0.552862	0	0.243000	Not significant

No	Province	LISA-I	LISA-CL	LISA-P	Significant ($\alpha = 0.05$)
24	Papua	-0.166832	0	0.499000	Not significant
25	West Papua	-0.166832	0	0.243000	Not significant
26	Riau	-0.089544	0	0.356000	Not significant
27	West Sulawesi	0.634425	0	0.153000	Not significant
28	South Sulawesi	0.247301	0	0.135000	Not significant
29	Central Sulawesi	0.205408	0	0.299000	Not significant
30	Southeast Sulawesi	-0.130015	0	0.187000	Not significant
31	North Sulawesi	-0.254464	0	0.343000	Not significant
32	West Sumatra	-0.625513	0	0.119000	Not significant
33	South Sumatra	-0.148827	0	0.394000	Not significant
34	North Sumatra	-0.073593	0	0.235000	Not significant

LISA-CL : *Cluster*

LISA-I : Moran's I value

LISA-P : Significant value

2. 2007 (YLL)

No	Province	LISA-I	LISA-CL	LISA-P	Significant (α = 0.05)
1	Aceh	-0.03288	0	0.485	Not significant
2	Bali	0.310708	0	0.316	Not significant
3	Banten	0.060029	0	0.356	Not significant
4	Bengkulu	-0.41957	0	0.107	Not significant
5	Yogyakarta (DIY)	-0.48788	0	0.22	Not significant
6	Gorontalo	0.298167	2	0.046	Significant
7	Jakarta	-0.46516	0	0.143	Not significant
8	Jambi	-0.04008	0	0.202	Not significant
9	West Java	0.131287	0	0.29	Not significant
10	Central Java	0.011056	0	0.408	Not significant
11	East Java	0.061217	0	0.246	Not significant
12	West Kalimantan	0.014805	0	0.405	Not significant
13	South Kalimantan	-0.29658	0	0.426	Not significant
14	Central Kalimantan	0.03308	0	0.348	Not significant
15	East Kalimantan	-1.04639	3	0.014	Significant
16	North Kalimantan	-3.03148	0	0.151	Not significant
17	Bangka Belitung Islands	-0.48115	0	0.115	Not significant
18	Riau Islands	0.628629	0	0.357	Not significant
19	Lampung	0.039259	0	0.329	Not significant
20	Maluku	0.494026	0	0.32	Not significant
21	North Maluku	0.996998	0	0.182	Not significant
22	West Nusa Tenggara	0.310708	0	0.375	Not significant
23	East Nusa Tenggara	-0.98635	0	0.306	Not significant
24	Papua	-0.28242	0	0.318	Not significant
25	West Papua	-0.28242	0	0.249	Not significant
26	Riau	-0.21107	0	0.223	Not significant

No	Province	LISA-I	LISA-CL	LISA-P	Significant (α = 0.05)
27	West Sulawesi	0.370047	0	0.16	Not significant
28	South Sulawesi	0.128049	0	0.178	Not significant
29	Central Sulawesi	0.252842	0	0.261	Not significant
30	Southeast Sulawesi	-0.07431	0	0.212	Not significant
31	North Sulawesi	0.2815	0	0.448	Not significant
32	West Sumatra	-0.65921	0	0.195	Not significant
33	South Sumatra	-0.16866	0	0.464	Not significant
34	North Sumatra	-0.13254	0	0.22	Not significant

LISA-CL : *Cluster*

LISA-I : Moran's I value

LISA-P : Significant value

3. **2023 (YLL)**

No	Province	LISA-I	LISA-CL	LISA-P	Significant (α = 0.05)
1	Aceh	0.049071	0	0.419000	Not significant
2	Bali	0.240831	0	0.431000	Not significant
3	Banten	-0.038519	0	0.480000	Not significant
4	Bengkulu	-0.356025	0	0.152000	Not significant
5	Yogyakarta (DIY)	-1.053533	0	0.249000	Not significant
6	Gorontalo	0.249215	0	0.052000	Not significant
7	Jakarta	-0.767366	0	0.153000	Not significant
8	Jambi	-0.234564	0	0.189000	Not significant
9	West Java	0.163132	0	0.317000	Not significant
10	Central Java	-0.035824	0	0.495000	Not significant
11	East Java	0.329330	0	0.274000	Not significant
12	West Kalimantan	-0.092632	0	0.320000	Not significant
13	South Kalimantan	-0.699821	0	0.360000	Not significant
14	Central Kalimantan	0.024112	0	0.225000	Not significant
15	East Kalimantan	-0.997776	3	0.011000	Significant
16	North Kalimantan	-2.238902	0	0.194000	Not significant
17	Bangka Belitung Islands	-0.933524	0	0.115000	Not significant
18	Riau Islands	0.044879	0	0.433000	Not significant
19	Lampung	0.013009	0	0.365000	Not significant
20	Maluku	0.453082	0	0.181000	Not significant
21	North Maluku	1.088469	0	0.096000	Not significant
22	West Nusa Tenggara	0.240831	0	0.257000	Not significant
23	East Nusa Tenggara	-0.712229	0	0.448000	Not significant
24	Papua	-0.673944	0	0.153000	Not significant
25	West Papua	-0.673944	0	0.220000	Not significant
26	Riau	-0.004001	0	0.387000	Not significant

No	Province	LISA-I	LISA-CL	LISA-P	Significant (α = 0.05)
27	West Sulawesi	0.263440	0	0.288000	Not significant
28	South Sulawesi	0.060506	0	0.270000	Not significant
29	Central Sulawesi	0.145060	0	0.342000	Not significant
30	Southeast Sulawesi	-0.091902	0	0.303000	Not significant
31	North Sulawesi	0.308119	0	0.482000	Not significant
32	West Sumatra	-0.621143	0	0.169000	Not significant
33	South Sumatra	-0.440114	0	0.294000	Not significant
34	North Sumatra	-0.217849	0	0.251000	Not significant

LISA-CL : *Cluster*

LISA-I : Moran's I value

LISA-P : Significant value

LISA Statistics, Cluster Classification, and Significance Levels for Disability-Adjusted Life Year (DALY) Due to Cervical Cancer Across 34 Provinces

1. **1990 (DALY)**

No	Province	LISA-I	LISA-CL	LISA-P	Significant ($\alpha = 0.05$)
1	Aceh	-0.085924	0	0.452000	Not significant
2	Bali	0.344022	0	0.251000	Not significant
3	Banten	-0.482434	0	0.285000	Not significant
4	Bengkulu	-0.307099	0	0.158000	Not significant
5	Yogyakarta (DIY)	-0.438514	0	0.157000	Not significant
6	Gorontalo	-0.238275	0	0.060000	Not significant
7	Jakarta	-0.443007	0	0.208000	Not significant
8	Jambi	-0.098949	0	0.327000	Not significant
9	West Java	-0.015032	0	0.227000	Not significant
10	Central Java	0.221022	0	0.263000	Not significant
11	East Java	1.138730	0	0.147000	Not significant
12	West Kalimantan	0.168126	0	0.258000	Not significant
13	South Kalimantan	-0.826542	0	0.278000	Not significant
14	Central Kalimantan	-0.000395	0	0.380000	Not significant
15	East Kalimantan	-1.179368	3	0.024000	Significant
16	North Kalimantan	-3.408315	0	0.074000	Not significant
17	Bangka Belitung Islands	-0.208507	0	0.209000	Not significant
18	Riau Islands	0.775273	0	0.306000	Not significant
19	Lampung	0.008886	0	0.417000	Not significant
20	Maluku	0.271328	0	0.487000	Not significant
21	North Maluku	1.075308	0	0.144000	Not significant
22	West Nusa Tenggara	0.344022	0	0.364000	Not significant
23	East Nusa Tenggara	-0.554166	0	0.243000	Not significant

No	Province	LISA-I	LISA-CL	LISA-P	Significant (α = 0.05)
24	Papua	-0.162399	0	0.499000	Not significant
25	West Papua	-0.162399	0	0.243000	Not significant
26	Riau	-0.089315	0	0.355000	Not significant
27	West Sulawesi	0.637589	0	0.153000	Not significant
28	South Sulawesi	0.248021	0	0.135000	Not significant
29	Central Sulawesi	0.208074	0	0.299000	Not significant
30	Southeast Sulawesi	-0.130118	0	0.187000	Not significant
31	North Sulawesi	-0.248960	0	0.343000	Not significant
32	West Sumatra	-0.625267	0	0.118000	Not significant
33	South Sumatra	-0.148244	0	0.391000	Not significant
34	North Sumatra	-0.073594	0	0.234000	Not significant

LISA-CL : *Cluster*

LISA-I : Moran's I value

LISA-P : Significant value

2. 2007 (DALY)

No	Province	LISA-I	LISA-CL	LISA-P	Significant (α = 0.05)
1	Aceh	-0.03228	0	0.485	Not significant
2	Bali	0.304632	0	0.316	Not significant
3	Banten	0.06175	0	0.351	Not significant
4	Bengkulu	-0.41764	0	0.107	Not significant
5	Yogyakarta (DIY)	-0.48547	0	0.22	Not significant
6	Gorontalo	0.305673	2	0.046	Significant
7	Jakarta	-0.45733	0	0.143	Not significant
8	Jambi	-0.04027	0	0.202	Not significant
9	West Java	0.134164	0	0.286	Not significant
10	Central Java	0.011355	0	0.406	Not significant
11	East Java	0.059713	0	0.246	Not significant
12	West Kalimantan	0.015181	0	0.411	Not significant
13	South Kalimantan	-0.29052	0	0.429	Not significant
14	Central Kalimantan	0.031346	0	0.349	Not significant
15	East Kalimantan	-1.03768	3	0.014	Significant
16	North Kalimantan	-3.02383	0	0.151	Not significant
17	Bangka Belitung Islands	-0.48003	0	0.115	Not significant
18	Riau Islands	0.621846	0	0.357	Not significant
19	Lampung	0.039532	0	0.329	Not significant
20	Maluku	0.489237	0	0.32	Not significant
21	North Maluku	0.995478	0	0.182	Not significant
22	West Nusa Tenggara	0.304632	0	0.405	Not significant
23	East Nusa Tenggara	-0.98175	0	0.306	Not significant
24	Papua	-0.27581	0	0.318	Not significant
25	West Papua	-0.27581	0	0.249	Not significant
26	Riau	-0.20921	0	0.223	Not significant

No	Province	LISA-I	LISA-CL	LISA-P	Significant (α = 0.05)
27	West Sulawesi	0.373466	0	0.16	Not significant
28	South Sulawesi	0.128552	0	0.174	Not significant
29	Central Sulawesi	0.258088	0	0.255	Not significant
30	Southeast Sulawesi	-0.07106	0	0.212	Not significant
31	North Sulawesi	0.286998	0	0.448	Not significant
32	West Sumatra	-0.65588	0	0.196	Not significant
33	South Sumatra	-0.16679	0	0.465	Not significant
34	North Sumatra	-0.13188	0	0.218	Not significant

LISA-CL : *Cluster*

LISA-I : Moran's I value

LISA-P : Significant value

3. **2023 (DALY)**

No	Province	LISA-I	LISA-CL	LISA-P	Significant (α = 0.05)
1	Aceh	0.049816	0	0.419000	Not significant
2	Bali	0.239418	0	0.431000	Not significant
3	Banten	-0.032391	0	0.467000	Not significant
4	Bengkulu	-0.355236	0	0.157000	Not significant
5	Yogyakarta (DIY)	-1.051674	0	0.249000	Not significant
6	Gorontalo	0.254955	0	0.051000	Not significant
7	Jakarta	-0.755244	0	0.154000	Not significant
8	Jambi	-0.236229	0	0.189000	Not significant
9	West Java	0.166647	0	0.317000	Not significant
10	Central Java	-0.034617	0	0.493000	Not significant
11	East Java	0.328226	0	0.274000	Not significant
12	West Kalimantan	-0.092071	0	0.316000	Not significant
13	South Kalimantan	-0.689427	0	0.358000	Not significant
14	Central Kalimantan	0.021628	0	0.227000	Not significant
15	East Kalimantan	-0.992530	3	0.011000	Significant
16	North Kalimantan	-2.255988	0	0.194000	Not significant
17	Bangka Belitung Islands	-0.937878	0	0.115000	Not significant
18	Riau Islands	0.033511	0	0.433000	Not significant
19	Lampung	0.014005	0	0.365000	Not significant
20	Maluku	0.451420	0	0.181000	Not significant
21	North Maluku	1.097807	0	0.096000	Not significant
22	West Nusa Tenggara	0.239418	0	0.257000	Not significant
23	East Nusa Tenggara	-0.718391	0	0.448000	Not significant
24	Papua	-0.652245	0	0.153000	Not significant
25	West Papua	-0.652245	0	0.220000	Not significant
26	Riau	-0.002979	0	0.385000	Not significant

No	Province	LISA-I	LISA-CL	LISA-P	Significant ($\alpha = 0.05$)
27	West Sulawesi	0.268542	0	0.286000	Not significant
28	South Sulawesi	0.061444	0	0.267000	Not significant
29	Central Sulawesi	0.150362	0	0.335000	Not significant
30	Southeast Sulawesi	-0.088674	0	0.303000	Not significant
31	North Sulawesi	0.313741	0	0.482000	Not significant
32	West Sumatra	-0.615000	0	0.170000	Not significant
33	South Sumatra	-0.438964	0	0.294000	Not significant
34	North Sumatra	-0.217596	0	0.246000	Not significant

LISA-CL : *Cluster*

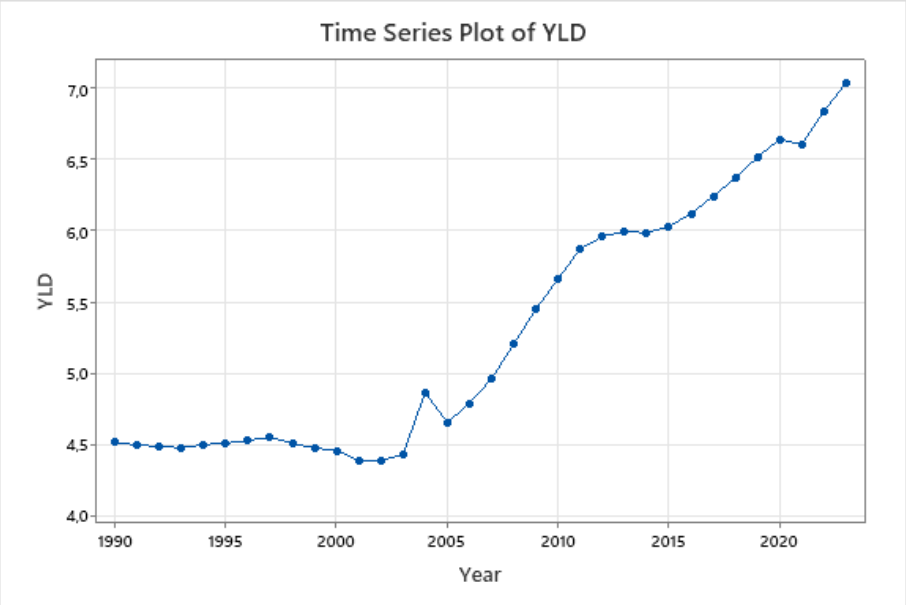
LISA-I : Moran's I value

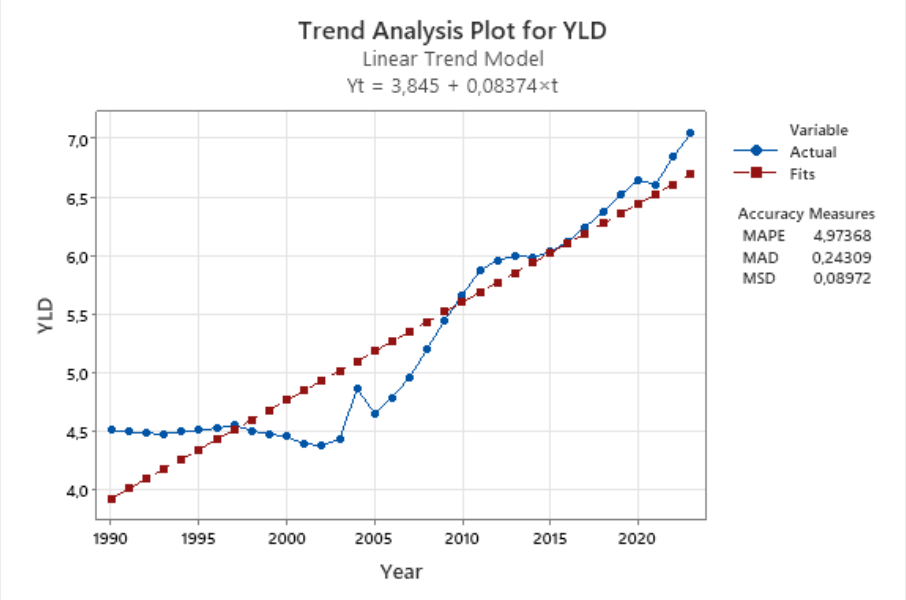
LISA-P : Significant value

Appendix 6

Holt's Double Exponential Smoothing Model Summary for YLD

1. Plot Data





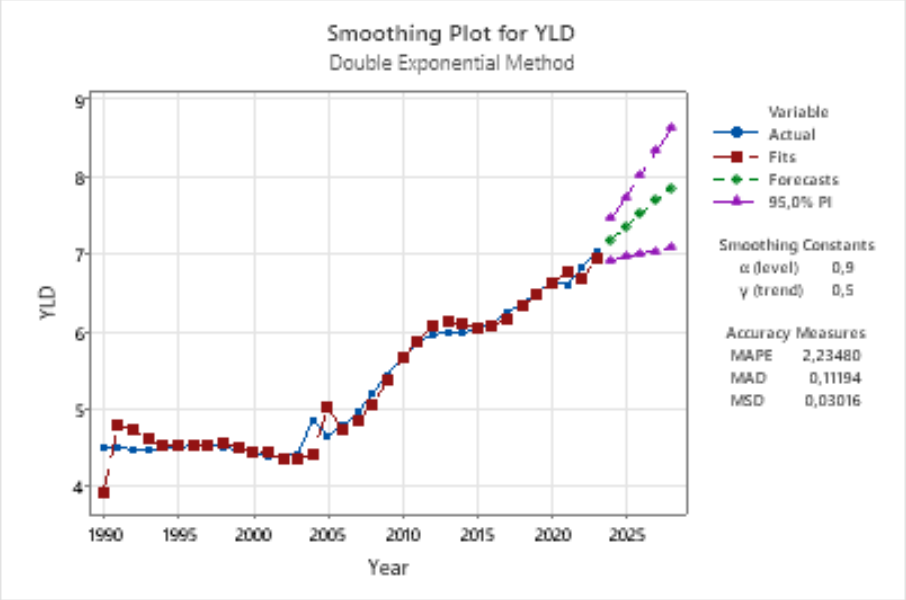
2. Mean Absolute Percentage Error (MAPE)

	0,1	**0,2**	**0,3**	**0,4**	**0,5**	**0,6**	**0,7**	**0,8**	**0,9**
0,1	5,70131	4,60989	3,95781	3,48449	3,12822	2,84850	2,61523	2,45935	2,39664
0,2	6,17844	4,89126	4,22527	3,54829	3,07248	2,76429	2,55013	2,44943	2,37463
0,3	6,27500	5,46840	4,27369	3,45692	2,94601	2,64041	2,46365	2,37285	2,32166
0,4	6,50309	5,62287	4,13913	3,26837	2,77842	2,49114	2,37634	2,31092	2,26746
0,5	7,10731	5,56718	3,90882	3,02632	2,60373	2,43565	2,34946	2,27771	2,23480
0,6	7,67188	5,31608	3,61249	2,82948	2,52435	2,45527	2,36690	2,26540	2,24859
0,7	8,00944	5,12210	3,36400	2,74460	2,53131	2,49082	2,39118	2,31077	2,29581
0,8	8,14073	4,77939	3,17663	2,72103	2,59649	2,54995	2,42994	2,36248	2,32377
0,9	8,07388	4,47110	3,06881	2,73279	2,66419	2,59959	2,48764	2,38718	2,33243

3. Mean Absolute Deviation (MAD)

	0,1	**0,2**	**0,3**	**0,4**	**0,5**	**0,6**	**0,7**	**0,8**	**0,9**
0,1	0,28994	0,22993	0,19628	0,17367	0,15632	0,14268	0,13124	0,12340	0,12000
0,2	0,31561	0,24366	0,21170	0,17866	0,15487	0,13943	0,12887	0,12342	0,11924
0,3	0,31786	0,27766	0,21672	0,17517	0,14974	0,13441	0,12507	0,11980	0,11666
0,4	0,33074	0,28750	0,21099	0,16700	0,14224	0,12737	0,12072	0,11673	0,11386
0,5	0,36762	0,28589	0,20013	0,15547	0,13381	0,12441	0,11921	0,11484	0,11194
0,6	0,40132	0,27354	0,18564	0,14591	0,12964	0,12506	0,11971	0,11390	0,11248
0,7	0,42055	0,26518	0,17289	0,14131	0,12972	0,12639	0,12049	0,11596	0,11454
0,8	0,42716	0,24779	0,16350	0,13973	0,13245	0,12888	0,12228	0,11819	0,11559
0,9	0,42346	0,23111	0,15790	0,13999	0,13542	0,13104	0,12478	0,11906	0,11569

4. Forecasting Graph



Model Summary

Time	YLD	Smooth	Predict	Error
1990	4,51371	4,45520	3,92856	0,585151
1991	4,49665	4,52721	4,80225	-0,305595
1992	4,48551	4,51064	4,73675	-0,251235
1993	4,47708	4,49008	4,60712	-0,130041
1994	4,49946	4,50232	4,52804	-0,028579
1995	4,50922	4,51104	4,52742	-0,018200
1996	4,52789	4,52790	4,52795	-0,000064
1997	4,55280	4,55200	4,54478	0,008026
1998	4,50701	4,51356	4,57250	-0,065480
1999	4,47600	4,47886	4,50459	-0,028586
2000	4,45765	4,45759	4,45703	0,000622
2001	4,38893	4,39364	4,43603	-0,047103
2002	4,38696	4,38335	4,35088	0,036074
2003	4,42903	4,42181	4,35683	0,072193
2004	4,86634	4,82248	4,42777	0,438565
2005	4,65374	4,69095	5,02580	-0,372065
2006	4,79020	4,78386	4,72684	0,063358
2007	4,96211	4,95072	4,84827	0,113844
2008	5,20630	5,19231	5,06636	0,139941
2009	5,45108	5,44306	5,37091	0,080166
2010	5,66488	5,66417	5,65774	0,007138
2011	5,87467	5,87541	5,88206	-0,007393
2012	5,96130	5,97417	6,08998	-0,128671
2013	5,99801	6,01129	6,13084	-0,132826
2014	5,98690	5,99903	6,10819	-0,121287
2015	6,03324	6,03405	6,04134	-0,008102
2016	6,11999	6,11526	6,07272	0,047266
2017	6,24460	6,23766	6,17520	0,069406
2018	6,37002	6,36590	6,32883	0,041188
2019	6,51853	6,51424	6,47561	0,042924
2020	6,64406	6,64398	6,64326	0,000797
2021	6,60870	6,62517	6,77336	-0,164652
2022	6,84220	6,82603	6,68046	0,161745
2023	7,04187	7,03310	6,95410	0,087777

Method

Data YLD
Length 34

Smoothing Constants

α (level) 0,9
γ (trend) 0,5

Forecasts

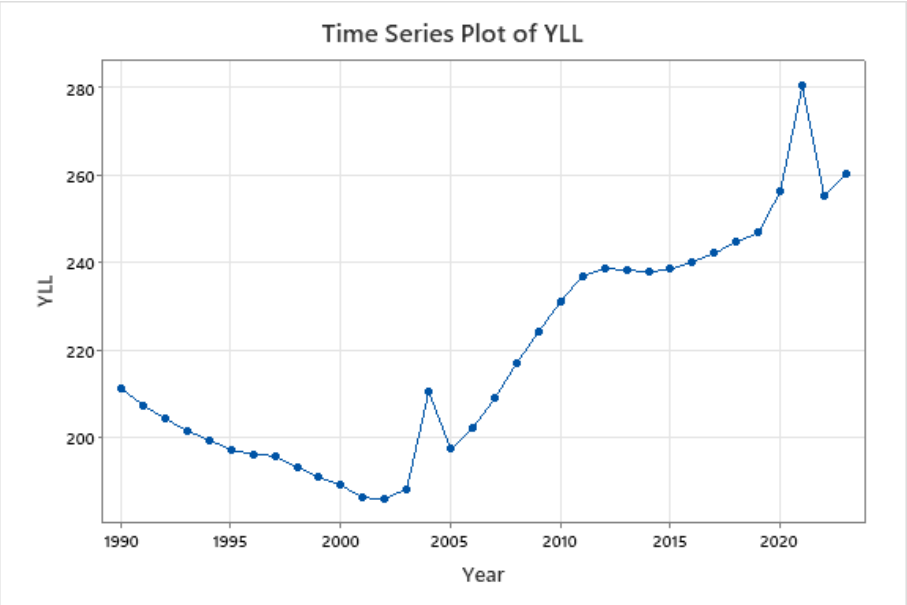
Period	Forecast	Lower	Upper
2024	7,20067	6,92641	7,47492
2025	7,36824	6,97603	7,76045
2026	7,53581	7,01830	8,05332
2027	7,70338	7,05748	8,34928
2028	7,87095	7,09512	8,64679

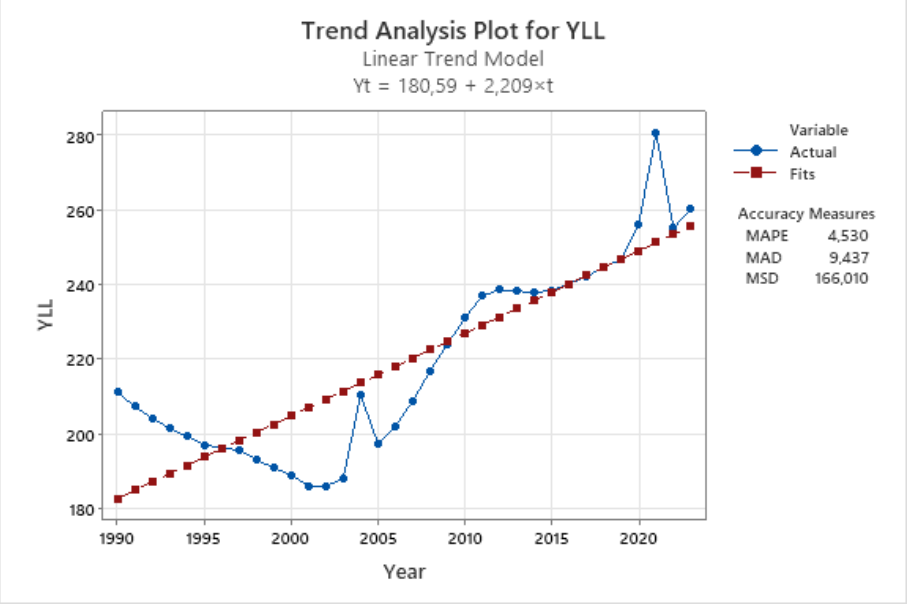
Accuracy Measures

MAPE 2,23480
MAD 0,11194
MSD 0,03016

Holt's Double Exponential Smoothing Model Summary for YLL

1. Plot Data





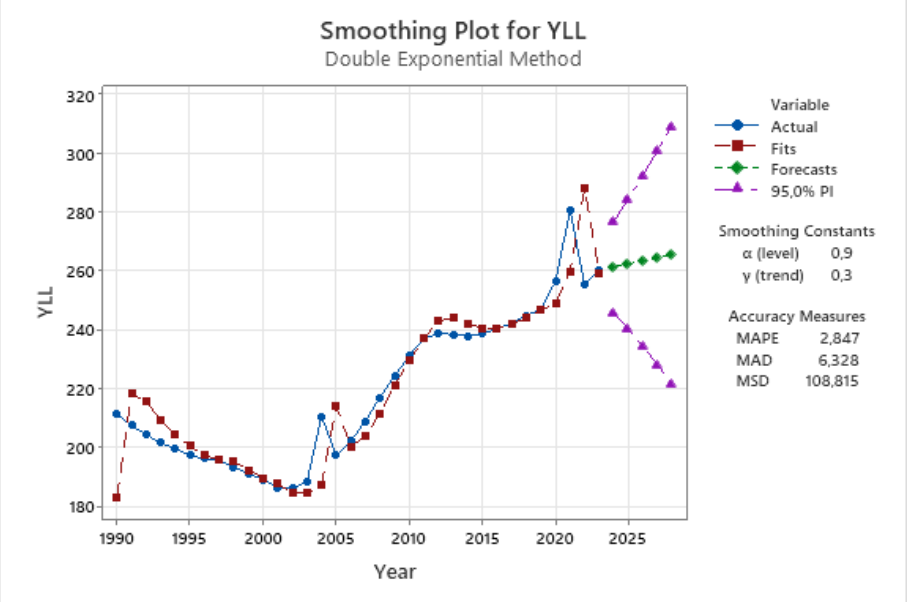
2. Mean Absolute Percentage Error (MAPE)

	0,1	**0,2**	**0,3**	**0,4**	**0,5**	**0,6**	**0,7**	**0,8**	**0,9**
0,1	5,431	4,841	4,377	3,879	3,534	3,2692	3,0577	2,9622	2,9002
0,2	6,084	5,443	4,653	3,981	3,504	3,1993	3,0262	2,9441	2,891
0,3	6,474	5,864	4,669	3,824	3,348	3,068	2,958	2,873	2,847
0,4	6,953	5,968	4,463	3,568	3,185	3,021	2,952	2,873	2,870
0,5	7,562	5,806	4,174	3,435	3,184	3,057	3,003	2,901	2,917
0,6	8,046	5,514	3,960	3,462	3,212	3,147	3,042	2,905	2,971
0,7	8,329	5,198	3,801	3,482	3,296	3,202	3,082	2,972	3,053
0,8	8,379	4,961	3,839	3,498	3,368	3,266	3,126	3,046	3,147
0,9	8,346	4,699	3,910	3,555	3,433	3,337	3,167	3,125	3,237

3. Mean Absolute Deviation (MAD)

	0,1	**0,2**	**0,3**	**0,4**	**0,5**	**0,6**	**0,7**	**0,8**	**0,9**
0,1	11,562	10,322	9,432	8,440	7,743	7,1912	6,7472	6,5418	6,4011
0,2	13,010	11,683	10,107	8,725	7,735	7,0955	6,7232	6,5344	6,404
0,3	13,857	12,671	10,188	8,430	7,443	6,852	6,601	6,399	6,328
0,4	14,943	12,930	9,772	7,932	7,131	6,770	6,597	6,404	6,391
0,5	16,339	12,607	9,174	7,665	7,135	6,850	6,704	6,457	6,497
0,6	17,454	11,982	8,738	7,726	7,196	7,033	6,778	6,456	6,622
0,7	18,118	11,312	8,410	7,773	7,371	7,138	6,848	6,605	6,809
0,8	18,230	10,809	8,500	7,814	7,512	7,256	6,932	6,770	7,020
0,9	18,142	10,254	8,664	7,931	7,632	7,393	7,005	6,946	7,225

4. Forecasting Graph



Model Summary

Time	YLL	Smooth	Predict	Error
1990	211,234	208,391	182,801	28,4328
1991	207,393	208,481	218,277	-10,8835
1992	204,290	205,404	215,428	-11,1385
1993	201,552	202,331	209,343	-7,7913
1994	199,423	199,898	204,167	-4,7440
1995	197,187	197,513	200,453	-3,2663
1996	196,183	196,283	197,186	-1,0039
1997	195,783	195,773	195,685	0,0981
1998	193,229	193,426	195,202	-1,9731
1999	190,928	191,068	192,322	-1,3941
2000	189,114	189,161	189,587	-0,4732
2001	186,185	186,322	187,553	-1,3681
2002	186,038	185,868	184,344	1,6936
2003	188,243	187,854	184,348	3,8953
2004	210,449	208,143	187,385	23,0639
2005	197,385	199,036	213,901	-16,5166
2006	202,134	201,954	200,335	1,7988
2007	208,899	208,383	203,739	5,1595
2008	216,989	216,446	211,561	5,4285
2009	224,229	223,915	221,090	3,1387
2010	231,075	230,908	229,406	1,6691
2011	236,977	236,964	236,850	0,1271
2012	238,673	239,100	242,940	-4,2671
2013	238,298	238,861	243,923	-5,6251
2014	237,883	238,311	242,166	-4,2834
2015	238,485	238,683	240,459	-1,9744
2016	240,252	240,257	240,298	-0,0457
2017	242,139	242,112	241,860	0,2795
2018	244,737	244,642	243,790	0,9468
2019	246,806	246,783	246,576	0,2295
2020	256,322	255,568	248,779	7,5432
2021	280,462	278,375	259,601	20,8606
2022	255,104	258,398	288,041	-32,9366
2023	260,260	260,151	259,170	1,0898

Method

Data YLL
Length 34

Smoothing Constants

α (level) 0,9
γ (trend) 0,3

Forecasts

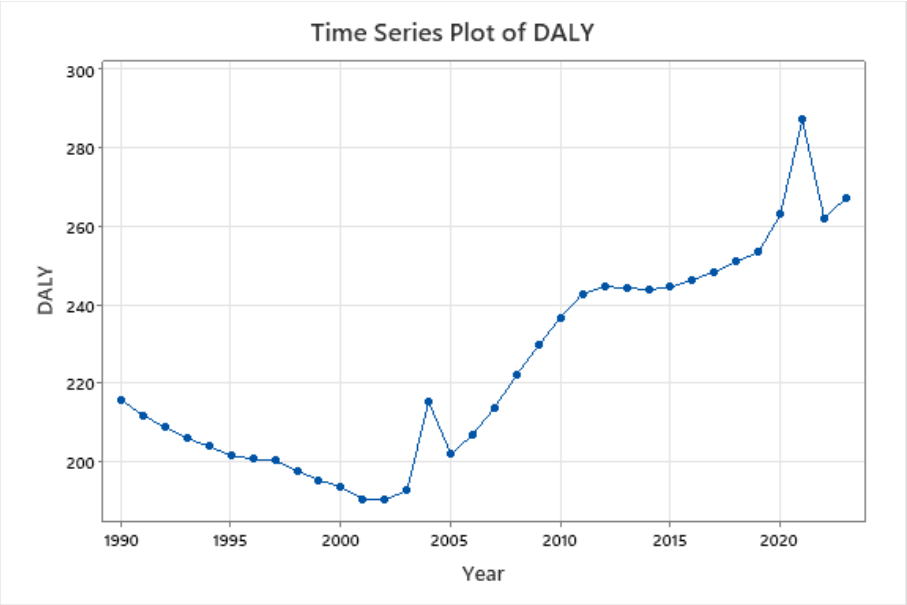
Period	Forecast	Lower	Upper
2024	261,218	245,715	276,720
2025	262,284	240,114	284,454
2026	263,351	234,098	292,603
2027	264,417	227,908	300,927
2028	265,484	221,630	309,339

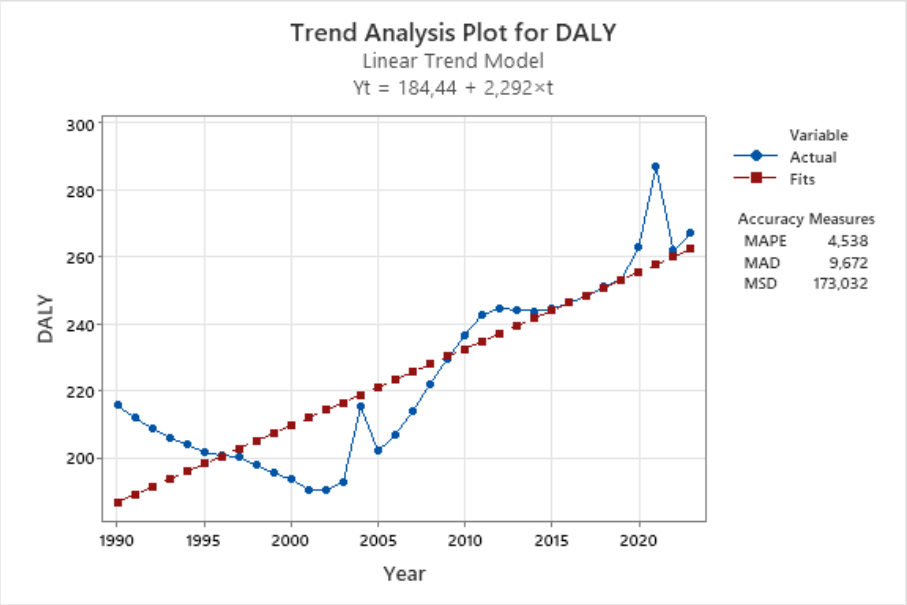
Accuracy Measures

MAPE 2,847
MAD 6,328
MSD 108,815

Holt's Double Exponential Smoothing Model Summary for DALY

1. Plot Data





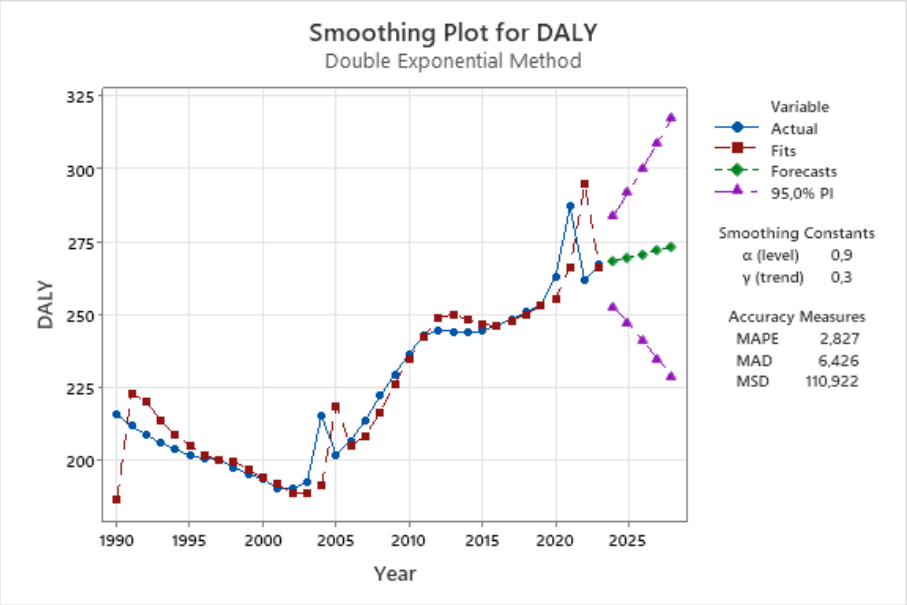
2. Mean Absolute Percentage Error (MAPE)

	0,1	**0,2**	**0,3**	**0,4**	**0,5**	**0,6**	**0,7**	**0,8**	**0,9**
0,1	5,433	4,821	4,359	3,860	3,513	3,2482	3,0357	2,9402	2,8786
0,2	6,074	5,423	4,632	3,962	3,484	3,178	3,006	2,923	2,870
0,3	6,459	5,848	4,652	3,805	3,330	3,048	2,938	2,853	2,827
0,4	6,935	5,948	4,446	3,553	3,166	3,000	2,929	2,850	2,848
0,5	7,538	5,785	4,157	3,414	3,160	3,032	2,978	2,876	2,893
0,6	8,025	5,501	3,942	3,438	3,187	3,121	3,017	2,882	2,945
0,7	8,310	5,180	3,780	3,458	3,270	3,175	3,056	2,947	3,026
0,8	8,356	4,943	3,816	3,473	3,342	3,239	3,099	3,021	3,117
0,9	8,332	4,679	3,886	3,528	3,405	3,309	3,139	3,097	3,205

3. Mean Absolute Deviation (MAD)

	0,1	**0,2**	**0,3**	**0,4**	**0,5**	**0,6**	**0,7**	**0,8**	**0,9**
0,1	11,840	10,515	9,607	8,588	7,872	7,3057	6,8487	6,6386	6,4956
0,2	13,293	11,908	10,293	8,882	7,865	7,206	6,828	6,633	6,501
0,3	14,151	12,931	10,383	8,579	7,572	6,961	6,703	6,497	6,426
0,4	15,254	13,188	9,956	8,0771	7,248	6,875	6,694	6,496	6,485
0,5	16,673	12,853	9,347	7,792	7,245	6,949	6,800	6,547	6,590
0,6	17,823	12,231	8,897	7,850	7,303	7,134	6,874	6,550	6,713
0,7	18,507	11,531	8,557	7,897	7,479	7,239	6,942	6,697	6,900
0,8	18,611	11,019	8,645	7,936	7,623	7,359	7,025	6,866	7,109
0,9	18,542	10,446	8,809	8,053	7,742	7,494	7,101	7,039	7,314

4. Forecasting Graph



Model Summary

Time	DALY	Smooth	Predict	Error
1990	215,748	212,846	186,730	29,0180
1991	211,890	212,998	222,973	-11,0837
1992	208,775	209,911	220,133	-11,3573
1993	206,029	206,824	213,979	-7,9502
1994	203,923	204,405	208,746	-4,8231
1995	201,696	202,029	205,025	-3,3288
1996	200,710	200,814	201,749	-1,0389
1997	200,336	200,328	200,255	0,0815
1998	197,736	197,941	199,790	-2,0541
1999	195,404	195,549	196,849	-1,4448
2000	193,572	193,621	194,066	-0,4946
2001	190,574	190,717	192,005	-1,4311
2002	190,425	190,254	188,714	1,7102
2003	192,672	192,276	188,713	3,9594
2004	215,315	212,964	191,805	23,5107
2005	202,038	203,719	218,840	-16,8020
2006	206,924	206,738	205,058	1,8662
2007	213,861	213,333	208,581	5,2794
2008	222,195	221,636	216,602	5,5936
2009	229,680	229,353	226,415	3,2643
2010	236,740	236,567	235,014	1,7258
2011	242,851	242,836	242,694	0,1576
2012	244,634	245,071	249,005	-4,3706
2013	244,296	244,873	250,060	-5,7639
2014	243,869	244,313	248,306	-4,4362
2015	244,518	244,721	246,548	-2,0298
2016	246,372	246,376	246,408	-0,0360
2017	248,384	248,351	248,053	0,3309
2018	251,107	251,008	250,118	0,9893
2019	253,325	253,296	253,042	0,2828
2020	262,966	262,210	255,406	7,5601
2021	287,070	284,999	266,362	20,7084
2022	261,946	265,226	294,742	-32,7957
2023	267,302	267,183	266,114	1,1882

Method

Data	DALY
Length	34

Smoothing Constants

α (level)	0,9
γ (trend)	0,3

Forecasts

Period	Forecast	Lower	Upper
2024	268,392	252,649	284,134
2025	269,600	247,087	292,113
2026	270,809	241,104	300,514
2027	272,017	234,943	309,092
2028	273,226	228,693	317,759

Accuracy Measures

MAPE	2,827
MAD	6,426
MSD	110,922