Appendix 1: Dickey-Fuller test for stationay timeseries

Test for the null hypothesis of a unit root of a univarate time series (equivalently, non-stationary time series).

The Augmented Dickey-Fuller test incorporates three types of linear regression models. The first type is a linear model with no drift and linear trend with respect to time. The second type is a linear model with drift but no linear trend. The third type is a linear model with both drift and linear trend.

The p.value is calculated by interpolating the test statistics from the corresponding critical values tables (Fuller, 1996) for each type of linear models with given sample size.

Table 1: Dickey-Fuller test for all combinaisons of countries and age groups investigated

Age Group	Country	Lag	Type 1 ADF	p	Type 2 ADF	p	type 3 ADF	p
aged0to4	Austria	0	-25.46901	0.01	-25.58061	0.01	-25.88188	0.01
		1	-13.87015	0.01	-13.97061	0.01	-14.23441	0.01
	Belgium	0	-33.31891	0.01	-33.29395	0.01	-33.26725	0.01
		1	-33.58767	0.01	-33.57252	0.01	-33.55777	0.01
	Bulgaria	0	-25.41057	0.01	-25.43406	0.01	-25.53535	0.01
		1	-26.34241	0.01	-26.42894	0.01	-26.71033	0.01
	Croatia	0	-25.90297	0.01	-25.87847	0.01	-25.85121	0.01
		1	-28.80962	0.01	-28.78335	0.01	-28.75526	0.01
	Estonia	0	-40.75158	0.01	-40.72820	0.01	-40.70408	0.01
		1	-25.51579	0.01	-25.50579	0.01	-25.49484	0.01
	France	0	-36.48598	0.01	-36.47320	0.01	-36.47817	0.01
		1	-33.59053	0.01	-33.59255	0.01	-33.62146	0.01
	Germany	0	-20.19366	0.01	-20.19346	0.01	-20.20860	0.01
		1	-31.02686	0.01	-31.04228	0.01	-31.09637	0.01
	Greece	0	-26.98960	0.01	-27.00660	0.01	-27.04534	0.01
		1	-21.70470	0.01	-21.77268	0.01	-21.88349	0.01
	Netherlands	0	-19.16865	0.01	-19.15469	0.01	-19.14425	0.01
		1	-15.58574	0.01	-15.57327	0.01	-15.56148	0.01
	Portugal	0	-30.11342	0.01	-30.08952	0.01	-30.06471	0.01
		1	-22.34262	0.01	-22.32508	0.01	-22.30657	0.01
	Slovakia	0	-29.44357	0.01	-29.43000	0.01	-29.42300	0.01
		1	-25.63377	0.01	-25.62373	0.01	-25.61724	0.01
	Spain	0	-23.81364	0.01	-23.79230	0.01	-23.76395	0.01
		1	-19.82069	0.01	-19.80145	0.01	-19.77177	0.01
aged5to9	Austria	0	-21.54388	0.01	-21.57538	0.01	-21.67496	0.01
		1	-20.61992	0.01	-20.67341	0.01	-20.82247	0.01
	Belgium	0	-33.25112	0.01	-33.22573	0.01	-33.19716	0.01
		1	-36.68723	0.01	-36.70185	0.01	-36.75839	0.01
	Bulgaria	0	-26.02449	0.01	-26.04399	0.01	-26.13152	0.01
		1	-27.47929	0.01	-27.56497	0.01	-27.83684	0.01
	Croatia	0	-27.89732	0.01	-27.87007	0.01	-27.83651	0.01
		1	-25.40031	0.01	-25.37741	0.01	-25.35096	0.01
	Estonia	0	-33.43070	0.01	-33.41835	0.01	-33.41130	0.01
		1	-30.34129	0.01	-30.36434	0.01	-30.41924	0.01
	France	0	-37.28814	0.01	-37.27181	0.01	-37.26653	0.01
		1	-32.96499	0.01	-32.96107	0.01	-32.97158	0.01
	Germany	0	-19.92909	0.01	-19.92463	0.01	-19.93032	0.01
		1	-32.23008	0.01	-32.23253	0.01	-32.25944	0.01
	Greece	0	-25.32609	0.01	-25.34748	0.01	-25.39062	0.01
		1	-21.40068	0.01	-21.47793	0.01	-21.59879	0.01
	Netherlands	0	-19.78334	0.01	-19.76893	0.01	-19.75776	0.01
		1	-15.19935	0.01	-15.18658	0.01	-15.17357	0.01
	Portugal	0	-25.13555	0.01	-25.11552	0.01	-25.09511	0.01
		1	-22.32416	0.01	-22.30651	0.01	-22.28878	0.01
	Slovakia	0	-29.89597	0.01	-29.88136	0.01	-29.87183	0.01
		1	-23.53317	0.01	-23.52321	0.01	-23.51548	0.01
	Spain	0	-23.76281	0.01	-23.74257	0.01	-23.71796	0.01
		1	-19.95167	0.01	-19.93347	0.01	-19.90809	0.01

Table 2: Dickey-Fuller test for all combinaisons of countries and age groups investigated

Age Group	Country	Lag	Type 1 ADF	p	Type 2 ADF	p	type 3 ADF	p
aged10to14	Austria	0	-22.61957	0.01	-22.63609	0.01	-22.69723	0.01
		1	-22.68791	0.01	-22.72218	0.01	-22.82152	0.01
	Belgium	0	-32.98990	0.01	-32.96448	0.01	-32.93529	0.01
		1	-38.54384	0.01	-38.58620	0.01	-38.71505	0.01
	Bulgaria	0	-26.46013	0.01	-26.47255	0.01	-26.53673	0.01
		1	-28.43140	0.01	-28.50437	0.01	-28.72967	0.01
	Croatia	0	-26.89860	0.01	-26.87214	0.01	-26.83968	0.01
		1	-25.68226	0.01	-25.65879	0.01	-25.63223	0.01
	Estonia	0	-37.13532	0.01	-37.12178	0.01	-37.11395	0.01
		1	-26.12759	0.01	-26.13688	0.01	-26.16216	0.01
	France	0	-37.36690	0.01	-37.34574	0.01	-37.32820	0.01
		1	-32.38576	0.01	-32.37354	0.01	-32.36410	0.01
	Germany	0	-19.97324	0.01	-19.96673	0.01	-19.96752	0.01
		1	-32.11049	0.01	-32.10736	0.01	-32.12140	0.01
	Greece	0	-24.94338	0.01	-24.96588	0.01	-25.00663	0.01
		1	-21.33311	0.01	-21.41290	0.01	-21.53080	0.01
	Netherlands	0	-20.57509	0.01	-20.56011	0.01	-20.54855	0.01
		1	-14.89595	0.01	-14.88303	0.01	-14.87012	0.01
	Portugal	0	-26.26261	0.01	-26.24149	0.01	-26.22070	0.01
		1	-22.26367	0.01	-22.24587	0.01	-22.22892	0.01
	Slovakia	0	-27.31686	0.01	-27.30284	0.01	-27.29238	0.01
		1	-23.60532	0.01	-23.59421	0.01	-23.58407	0.01
	Spain	0	-23.70292	0.01	-23.68395	0.01	-23.66335	0.01
		1	-20.47416	0.01	-20.45707	0.01	-20.43656	0.01
aged15to19	Austria	0	-22.61218	0.01	-22.64128	0.01	-22.72471	0.01
		1	-19.76615	0.01	-19.81285	0.01	-19.92867	0.01
	Belgium	0	-31.93535	0.01	-31.91066	0.01	-31.88238	0.01
		1	-35.13137	0.01	-35.14193	0.01	-35.18536	0.01
	Bulgaria	0	-26.02569	0.01	-26.02584	0.01	-26.05264	0.01
		1	-28.15562	0.01	-28.19169	0.01	-28.30490	0.01
	Croatia	0	-25.19955	0.01	-25.17549	0.01	-25.14874	0.01
		1	-23.78106	0.01	-23.75915	0.01	-23.73656	0.01
	Estonia	0	-33.28189	0.01	-33.26323	0.01	-33.24443	0.01
		1	-29.86464	0.01	-29.86246	0.01	-29.86576	0.01
	France	0	-36.17298	0.01	-36.14894	0.01	-36.12475	0.01
		1	-31.54208	0.01	-31.52390	0.01	-31.50360	0.01
	Germany	0	-19.75929	0.01	-19.75173	0.01	-19.74904	0.01
		1	-32.24588	0.01	-32.24133	0.01	-32.24994	0.01
	Greece	0	-27.47896	0.01	-27.49491	0.01	-27.52322	0.01
		1	-21.55707	0.01	-21.62323	0.01	-21.71318	0.01
	Netherlands	0	-20.12459	0.01	-20.10994	0.01	-20.09944	0.01
		1	-14.31479	0.01	-14.30284	0.01	-14.29344	0.01
	Portugal	0	-24.82402	0.01	-24.80398	0.01	-24.78460	0.01
		1	-22.80105	0.01	-22.78271	0.01	-22.76594	0.01
	Slovakia	0	-28.81175	0.01	-28.79995	0.01	-28.79539	0.01
		1	-24.09113	0.01	-24.08355	0.01	-24.08029	0.01
	Spain	0	-23.43205	0.01	-23.41423	0.01	-23.39663	0.01
		1	-21.49339	0.01	-21.47679	0.01	-21.45968	0.01

Table 3: Dickey-Fuller test for all combinaisons of countries and age groups investigated

Age Group	Country	Lag	Type 1 ADF	Type 1 p	Type 2 ADF	Type 2 p	type 3 ADF	type 3 p
aged20to24	Austria	0	-22.85220	0.01	-22.87959	0.01	-22.95437	0.01
		1	-17.48765	0.01	-17.52480	0.01	-17.61397	0.01
	Belgium	0	-28.20166	0.01	-28.18003	0.01	-28.15663	0.01
		1	-28.65855	0.01	-28.63994	0.01	-28.61526	0.01
	Bulgaria	0	-24.58541	0.01	-24.57401	0.01	-24.56951	0.01
		1	-26.46795	0.01	-26.46704	0.01	-26.48281	0.01
	Croatia	0	-26.66833	0.01	-26.64399	0.01	-26.61886	0.01
		1	-25.05651	0.01	-25.03391	0.01	-25.01156	0.01
	Estonia	0	-29.20594	0.01	-29.18648	0.01	-29.16586	0.01
		1	-22.51914	0.01	-22.50552	0.01	-22.48962	0.01
	France	0	-34.80071	0.01	-34.77668	0.01	-34.75186	0.01
		1	-29.98333	0.01	-29.96429	0.01	-29.94263	0.01
	Germany	0	-19.37891	0.01	-19.37070	0.01	-19.36505	0.01
		1	-31.63201	0.01	-31.62778	0.01	-31.63325	0.01
	Greece	0	-29.81534	0.01	-29.82139	0.01	-29.83172	0.01
		1	-22.22276	0.01	-22.27433	0.01	-22.33511	0.01
	Netherlands	0	-17.44562	0.01	-17.43292	0.01	-17.42368	0.01
		1	-14.55030	0.01	-14.53943	0.01	-14.53184	0.01
	Portugal	0	-25.99105	0.01	-25.97001	0.01	-25.94977	0.01
		1	-22.77225	0.01	-22.75385	0.01	-22.73714	0.01
	Slovakia	0	-29.26995	0.01	-29.25127	0.01	-29.23211	0.01
		1	-25.40930	0.01	-25.39378	0.01	-25.37614	0.01
	Spain	0	-22.89085	0.01	-22.87383	0.01	-22.85753	0.01
		1	-22.19895	0.01	-22.18234	0.01	-22.16641	0.01
aged25to34	Austria	0	-23.74523	0.01	-23.79496	0.01	-23.92186	0.01
		1	-16.61550	0.01	-16.67648	0.01	-16.81961	0.01
	Belgium	0	-28.88558	0.01	-28.86373	0.01	-28.84072	0.01
		1	-28.22446	0.01	-28.20493	0.01	-28.17930	0.01
	Bulgaria	0	-24.57834	0.01	-24.56570	0.01	-24.55778	0.01
		1	-27.09133	0.01	-27.08607	0.01	-27.09078	0.01
	Croatia	0	-26.23029	0.01	-26.20594	0.01	-26.17996	0.01
		1	-25.75608	0.01	-25.73268	0.01	-25.70910	0.01
	Estonia	0	-28.77335	0.01	-28.75585	0.01	-28.73645	0.01
		1	-24.58799	0.01	-24.57656	0.01	-24.56213	0.01
	France	0	-35.51084	0.01	-35.48804	0.01	-35.46553	0.01
		1	-30.44296	0.01	-30.42639	0.01	-30.40808	0.01
	Germany	0	-19.27746	0.01	-19.26829	0.01	-19.25990	0.01
		1	-29.49673	0.01	-29.49096	0.01	-29.49066	0.01
	Greece	0	-24.77998	0.01	-24.78005	0.01	-24.77680	0.01
		1	-21.10222	0.01	-21.13765	0.01	-21.16844	0.01
	Netherlands	0	-20.52818	0.01	-20.51323	0.01	-20.50432	0.01
		1	-15.53928	0.01	-15.52765	0.01	-15.52219	0.01
	Portugal	0	-28.25149	0.01	-28.22851	0.01	-28.20685	0.01
		1	-21.35443	0.01	-21.33705	0.01	-21.32160	0.01
	Slovakia	0	-29.68478	0.01	-29.66561	0.01	-29.64592	0.01
		1	-25.90336	0.01	-25.88735	0.01	-25.86934	0.01
	Spain	0	-23.82350	0.01	-23.80553	0.01	-23.78766	0.01
		1	-22.31504	0.01	-22.29810	0.01	-22.28098	0.01

Table 4: Dickey-Fuller test for all combinaisons of countries and age groups investigated

Age Group	Country	Lag	Type 1 ADF	p	Type 2 ADF	p	type 3 ADF	p
aged35to44	Austria	0	-23.24782	0.01	-23.31507	0.01	-23.48124	0.01
		1	-13.82942	0.01	-13.90169	0.01	-14.06966	0.01
	Belgium	0	-32.51783	0.01	-32.49328	0.01	-32.46670	0.01
		1	-31.48194	0.01	-31.46630	0.01	-31.44708	0.01
	Bulgaria	0	-25.95560	0.01	-25.94511	0.01	-25.94326	0.01
		1	-28.62688	0.01	-28.63158	0.01	-28.65941	0.01
	Croatia	0	-26.11347	0.01	-26.08872	0.01	-26.06140	0.01
		1	-25.34969	0.01	-25.32649	0.01	-25.30277	0.01
	Estonia	0	-33.25926	0.01	-33.23933	0.01	-33.21663	0.01
		1	-25.89984	0.01	-25.88929	0.01	-25.87393	0.01
	France	0	-37.25978	0.01	-37.23701	0.01	-37.21596	0.01
		1	-32.02548	0.01	-32.01062	0.01	-31.99610	0.01
	Germany	0	-19.85580	0.01	-19.84675	0.01	-19.83919	0.01
		1	-31.03429	0.01	-31.02810	0.01	-31.02773	0.01
	Greece	0	-33.28781	0.01	-33.25769	0.01	-33.22350	0.01
		1	-22.73173	0.01	-22.72427	0.01	-22.71021	0.01
	Netherlands	0	-22.31996	0.01	-22.30371	0.01	-22.29641	0.01
		1	-16.07321	0.01	-16.06066	0.01	-16.05651	0.01
	Portugal	0	-24.60454	0.01	-24.58454	0.01	-24.56555	0.01
		1	-22.11824	0.01	-22.10025	0.01	-22.08424	0.01
	Slovakia	0	-29.07595	0.01	-29.05677	0.01	-29.03696	0.01
		1	-25.55354	0.01	-25.53717	0.01	-25.51884	0.01
	Spain	0	-25.67271	0.01	-25.65276	0.01	-25.63138	0.01
		1	-22.12000	0.01	-22.10253	0.01	-22.08267	0.01
aged45to54	Austria	0	-25.45883	0.01	-25.50321	0.01	-25.60841	0.01
		1	-17.39227	0.01	-17.44713	0.01	-17.56533	0.01
	Belgium	0	-32.37898	0.01	-32.35487	0.01	-32.32995	0.01
		1	-31.44070	0.01	-31.42022	0.01	-31.39409	0.01
	Bulgaria	0	-26.10965	0.01	-26.09460	0.01	-26.08303	0.01
		1	-29.96033	0.01	-29.95570	0.01	-29.96336	0.01
	Croatia	0	-25.32764	0.01	-25.30385	0.01	-25.27830	0.01
		1	-26.37184	0.01	-26.34774	0.01	-26.32378	0.01
	Estonia	0	-32.60264	0.01	-32.58119	0.01	-32.55754	0.01
		1	-27.79024	0.01	-27.77606	0.01	-27.75677	0.01
	France	0	-36.68444	0.01	-36.65959	0.01	-36.63465	0.01
		1	-32.36117	0.01	-32.34208	0.01	-32.32121	0.01
	Germany	0	-20.45620	0.01	-20.44612	0.01	-20.43756	0.01
		1	-31.49783	0.01	-31.48710	0.01	-31.47980	0.01
	Greece	0	-28.53677	0.01	-28.50621	0.01	-28.47115	0.01
		1	-21.59215	0.01	-21.57540	0.01	-21.55078	0.01
	Netherlands	0	-23.15216	0.01	-23.13530	0.01	-23.13260	0.01
		1	-15.61936	0.01	-15.60730	0.01	-15.60948	0.01
	Portugal	0	-23.49243	0.01	-23.47339	0.01	-23.45490	0.01
		1	-24.04920	0.01	-24.02971	0.01	-24.01196	0.01
	Slovakia	0	-28.09677	0.01	-28.07772	0.01	-28.05790	0.01
		1	-26.06214	0.01	-26.04481	0.01	-26.02565	0.01
	Spain	0	-27.01715	0.01	-26.99666	0.01	-26.97547	0.01
		1	-22.63057	0.01	-22.61321	0.01	-22.59452	0.01

Table 5: Dickey-Fuller test for all combinaisons of countries and age groups investigated

Age Group	Country	Lag	Type 1 ADF	p	Type 2 ADF	p	type 3 ADF	p
aged55to64	Austria	0	-26.36058	0.01	-26.38234	0.01	-26.43354	0.01
		1	-18.56070	0.01	-18.59167	0.01	-18.65297	0.01
	Belgium	0	-32.71086	0.01	-32.68673	0.01	-32.66250	0.01
		1	-32.88196	0.01	-32.85949	0.01	-32.83267	0.01
	Bulgaria	0	-26.13729	0.01	-26.11952	0.01	-26.10226	0.01
		1	-30.30713	0.01	-30.29434	0.01	-30.28383	0.01
	Croatia	0	-25.23550	0.01	-25.21183	0.01	-25.18677	0.01
		1	-25.21501	0.01	-25.19198	0.01	-25.16965	0.01
	Estonia	0	-32.48811	0.01	-32.46605	0.01	-32.44252	0.01
		1	-27.70305	0.01	-27.68670	0.01	-27.66664	0.01
	France	0	-35.86574	0.01	-35.84069	0.01	-35.81524	0.01
		1	-33.05125	0.01	-33.03030	0.01	-33.00719	0.01
	Germany	0	-20.18560	0.01	-20.17423	0.01	-20.16284	0.01
		1	-31.27442	0.01	-31.25956	0.01	-31.24415	0.01
	Greece	0	-38.55182	0.01	-38.50321	0.01	-38.45260	0.01
		1	-26.49011	0.01	-26.45904	0.01	-26.42412	0.01
	Netherlands	0	-27.94772	0.01	-27.92737	0.01	-27.93414	0.01
		1	-17.11511	0.01	-17.10200	0.01	-17.11464	0.01
	Portugal	0	-23.67507	0.01	-23.65581	0.01	-23.63754	0.01
		1	-22.86478	0.01	-22.84617	0.01	-22.82969	0.01
	Slovakia	0	-27.60755	0.01	-27.58805	0.01	-27.56775	0.01
		1	-26.70611	0.01	-26.68736	0.01	-26.66729	0.01
	Spain	0	-27.28275	0.01	-27.26222	0.01	-27.24168	0.01
		1	-23.33665	0.01	-23.31901	0.01	-23.30107	0.01
aged65+	Austria	0	-26.19272	0.01	-26.18814	0.01	-26.18355	0.01
		1	-23.15797	0.01	-23.16062	0.01	-23.16008	0.01
	Belgium	0	-32.32652	0.01	-32.30278	0.01	-32.27947	0.01
		1	-33.28664	0.01	-33.26330	0.01	-33.23677	0.01
	Bulgaria	0	-27.36994	0.01	-27.34943	0.01	-27.32765	0.01
		1	-28.86646	0.01	-28.84861	0.01	-28.82759	0.01
	Croatia	0	-25.22708	0.01	-25.20380	0.01	-25.18027	0.01
		1	-26.00213	0.01	-25.97853	0.01	-25.95701	0.01
	Estonia	0	-33.10293	0.01	-33.07934	0.01	-33.05590	0.01
		1	-27.36569	0.01	-27.34678	0.01	-27.32697	0.01
	France	0	-33.12503	0.01	-33.10052	0.01	-33.07513	0.01
		1	-33.43283	0.01	-33.40899	0.01	-33.38294	0.01
	Germany	0	-18.99333	0.01	-18.98122	0.01	-18.96833	0.01
		1	-29.34689	0.01	-29.32911	0.01	-29.30926	0.01
	Greece	0	-42.15600	0.01	-42.10136	0.01	-42.04594	0.01
		1	-29.46850	0.01	-29.43130	0.01	-29.39236	0.01
	Netherlands	0	-29.77934	0.01	-29.75767	0.01	-29.77038	0.01
		1	-19.86241	0.01	-19.84772	0.01	-19.86832	0.01
	Portugal	0	-23.87685	0.01	-23.85743	0.01	-23.83916	0.01
		1	-23.69067	0.01	-23.67139	0.01	-23.65481	0.01
	Slovakia	0	-28.99718	0.01	-28.97620	0.01	-28.95489	0.01
		1	-27.51525	0.01	-27.49538	0.01	-27.47539	0.01
	Spain	0	-26.92319	0.01	-26.90242	0.01	-26.88100	0.01
		1	-23.39707	0.01	-23.37902	0.01	-23.35995	0.01