Appendix A: CU and HEA models used for replication

Chenoweth & Ulfelder (2017) – Culled Model

|  |  |
| --- | --- |
|   | *nvc onset* |
| Infant mortality rate relative to global median (log) | -0.0207 | (0.17) |
| Leader's years in office (log) | 0.165 | (0.09) |
| Ruling elites' ethnicity is politically salient | 0.216 | (0.18) |
| Mobile phone subs per 100 ppl (logged) | 0.267\*\*\* | (0.07) |
| Urban population (0-100%), imputed | -0.00482 | (0.01) |
| ythbul4 | -1.358 | (4.54) |
| Sum of Banks riots & dems (log) | 0.557\*\*\* | (0.10) |
| Onsets of nonviolent campaigns in same region (log) | 0.275 | (0.17) |
| Post-Cold War period (1991+) | -0.718\*\* | (0.27) |
| Signatory to ICCPR 1st Optional Protocol | 0.192 | (0.21) |
| Election year | 0.482\*\* | (0.19) |
| *FH civil liberties index (base = 1)* |  |  |
| 2 | 1.417 | (1.13) |
| 3 | 2.945\*\* | (1.06) |
| 4 | 3.675\*\*\* | (1.05) |
| 5 | 3.378\*\* | (1.06) |
| 6 | 3.159\*\* | (1.07) |
| 7 | 2.801\* | (1.10) |
| Constant | -7.172\*\*\* | (1.30) |
| Observations |   | 5738 |
| *AIC* |  | 1212.68 |
| *BIC* |   | 1332.47 |

Hegre et al. (2013): Core Model

|  |  |
| --- | --- |
|  | *HegreModel* |
| conflict\_onsets\_binary |  |
| Oil | 0.119 |
|  | (0.575) |
| Ethn. dom. | -0.0680 |
|  | (0.673) |
| ln(IMR) | 0.709 |
|  | (0.000) |
| Youth | 0.0294 |
|  | (0.209) |
| ln(Population) | 0.181 |
|  | (0.000) |
| Education | 0.263 |
|  | (0.591) |
| W. Asia & N. Africa | 0.572 |
|  | (0.157) |
| West Africa | 0.0201 |
|  | (0.942) |
| Southern Africa | 0.0206 |
|  | (0.920) |
| Constant | -9.082 |
|  | (0.000) |
| Observations | 6084 |
| Pseudo *R*2 | 0.056 |
| *AIC* | 1518.08 |
| *BIC* | 1585.22 |

Appendix B: Moving-decade AUROC scores for GEA, CU, and HEA models using PITF, NAVCO, and PRIO dependent variables

Appendix C: Comparing Moving-Decade AUROC and Out-of-Sample Accuracy

We see close correspondence between the moving-decade AUROC and out-of-sample accuracy. The out-of-sample accuracy for each 10-year interval were calculated exactly like the 1995-2004 & 2005-2014 validation exercises, whereby predictions are made with models estimated with all years before the year of prediction. Therefore, the points representing earlier decades are based on less data than more recent decades. Even still, the two curves track one another very closely.

Appendix D: Predicted onset by decile for GEA, HEA and CU

|  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| *GEA* |  |  |  | *HEA* |  |  |  | *CU* |  |  |
| Country | Year | Ranking |   | Country | Year | Ranking |   | Country | Year | Ranking |
| Armenia | 1995 | 10% |   | Croatia | 1995 | 40% |   | Yugoslavia | 1995 | - |
| Belarus | 1995 | 30% |   | Pakistan | 1995 | 30% |   | Indonesia | 1996 | 10% |
| Comoros | 1995 | 20% |   | Senegal | 1995 | 30% |   | Cambodia | 1997 | 10% |
| Albania | 1996 | 10% |   | Central African Rep. | 1996 | 50% |   | Malaysia | 1997 | 80% |
| Nepal | 1996 | 20% |   | Congo Kinshasa | 1996 | 30% |   | Croatia | 1998 | 10% |
| Niger | 1996 | 10% |   | Iran (Persia) | 1996 | 40% |   | Indonesia | 1998 | 10% |
| Zambia | 1996 | 10% |   | Mexico | 1996 | 20% |   | Iran | 1998 | 30% |
| Cambodia | 1997 | 10% |   | Nepal | 1996 | 60% |   | Morocco | 1998 | 30% |
| Congo Brazzaville | 1997 | 10% |   | Niger | 1996 | 20% |   | Egypt | 1999 | 20% |
| Guinea-Bissau | 1998 | 10% |   | Chad | 1997 | 20% |   | Fiji | 1999 | 70% |
| Lesotho | 1998 | 10% |   | Comoros | 1997 | 70% |   | Ghana | 1999 | 40% |
| Serbia and Montenegro | 1998 | 80% |   | Congo | 1997 | 40% |   | Peru | 1999 | 30% |
| Ethiopia | 1999 | 10% |   | Eritrea | 1997 | 40% |   | Senegal | 1999 | 30% |
| Haiti | 1999 | 10% |   | Indonesia | 1997 | 30% |   | Ukraine | 1999 | 30% |
| Guinea | 2000 | 20% |   | Rwanda | 1997 | 20% |   | Philippines | 2000 | 20% |
| Solomon Islands | 2000 | 20% |   | Senegal | 1997 | 30% |   | Sri Lanka | 2000 | 30% |
| Ivory Coast | 2002 | 10% |   | Ethiopia | 1998 | 10% |   | Zambia | 2000 | 20% |
| Central African Republic | 2003 | 10% |   | Guinea-Bissau | 1998 | 60% |   | Madagascar | 2001 | 20% |
| Iran | 2004 | 10% |   | Lesotho | 1998 | 50% |   | Nepal | 2001 | 30% |
| Thailand | 2004 | 60% |   | Serbia | 1998 | 50% |   | Venezuela | 2001 | 10% |
| Yemen | 2004 | 20% |   | Tajikistan | 1998 | 30% |   | Bolivia | 2002 | 60% |
| Chad | 2005 | 20% |   | United Kingdom | 1998 | 50% |   | Georgia | 2002 | 10% |
| Fiji | 2006 | 40% |   | Djibouti | 1999 | 40% |   | Haiti | 2002 | 50% |
| Nigeria | 2006 | 20% |   | Eritrea | 1999 | 20% |   | Bangladesh | 2003 | 40% |
| Bangladesh | 2007 | 10% |   | Iran (Persia) | 1999 | 20% |   | Bolivia | 2003 | 10% |
| Ethiopia | 2007 | 20% |   | Russia | 1999 | 30% |   | Bolivia | 2004 | 10% |
| Mexico | 2007 | 70% |   | Uzbekistan | 1999 | 50% |   | Ecuador | 2004 | 20% |
| Mauritania | 2008 | 40% |   | Guinea | 2000 | 60% |   | Haiti | 2004 | 10% |
| China | 2009 | 60% |   | Liberia | 2000 | 30% |   | Kyrgyzstan | 2004 | 10% |
| Madagascar | 2009 | 40% |   | Senegal | 2000 | 30% |   | Lebanon | 2004 | 40% |
| Niger | 2009 | 30% |   | Central African Rep. | 2001 | 30% |   | Thailand | 2004 | 10% |
| Haiti | 2010 | 10% |   | Macedonia | 2001 | 70% |   | Togo | 2004 | 10% |
| Egypt | 2011 | 40% |   | Somalia | 2001 | 30% |   | Bangladesh | 2005 | 60% |
| Libya | 2011 | 80% |   | United States | 2001 | 80% |   | Belarus | 2005 | 10% |
| Syria | 2011 | 60% |   | Congo | 2002 | 20% |   | Lebanon | 2005 | 20% |
| Guinea-Bissau | 2012 | 30% |   | Cote D’Ivoire | 2002 | 60% |   | Mexico | 2005 | 70% |
| Mali | 2012 | 30% |   | Iraq | 2002 | 30% |   | Timor Leste | 2005 | 70% |
| Ukraine | 2014 | 20% |   | Pakistan | 2002 | 20% |   | Armenia | 2006 | 10% |
|  |  |  |   | Eritrea | 2003 | 30% |   | Egypt | 2006 | 10% |
|  |  |  |   | Senegal | 2003 | 20% |   | Guinea | 2006 | - |
|  |  |  |   | Sri Lanka (Ceylon) | 2003 | 20% |   | Myanmar | 2006 | 70% |
|  |  |  |   | Thailand | 2003 | 50% |   | Nepal | 2006 | 20% |
|  |  |  |   | Angola | 2004 | 20% |   | Pakistan | 2006 | 10% |
|  |  |  |   | Georgia | 2004 | 50% |   | Russia | 2006 | 10% |
|  |  |  |   | Haiti | 2004 | 50% |   | Thailand | 2006 | 20% |
|  |  |  |   | Nigeria | 2004 | 40% |   | Yemen | 2006 | 40% |
|  |  |  |   | Uzbekistan | 2004 | 40% |   | Haiti | 2007 | 50% |
|  |  |  |   | Azerbaijan | 2005 | 30% |   | Iraq | 2007 | 60% |
|  |  |  |   | Chad | 2005 | 20% |   | Thailand | 2007 | 10% |
|  |  |  |   | Iran (Persia) | 2005 | 30% |   | Bulgaria | 2008 | 80% |
|  |  |  |   | Myanmar (Burma) | 2005 | 20% |   | Honduras | 2008 | 30% |
|  |  |  |   | Sri Lanka (Ceylon) | 2005 | 20% |   | Iran | 2008 | 20% |
|  |  |  |   | Turkey | 2005 | 20% |   | Madagascar | 2008 | 60% |
|  |  |  |   | Central African Rep. | 2006 | 30% |   | Moldova | 2008 | 10% |
|  |  |  |   | Congo Kinshasa | 2006 | 20% |   | Pakistan | 2008 | 30% |
|  |  |  |   | Morocco | 2006 | 40% |   | Kyrgyzstan | 2009 | 10% |
|  |  |  |   | Somalia | 2006 | 20% |   | Morocco | 2009 | 40% |
|  |  |  |   | Angola | 2007 | 20% |   | Nepal | 2009 | 20% |
|  |  |  |   | Mali | 2007 | 30% |   | Russia | 2009 | 10% |
|  |  |  |   | Niger | 2007 | 20% |   | Tunisia | 2009 | 40% |
|  |  |  |   | Peru | 2007 | 40% |   | Algeria | 2010 | 20% |
|  |  |  |   | Burundi | 2008 | 20% |   | Bahrain | 2010 | 20% |
|  |  |  |   | Georgia | 2008 | 30% |   | Djibouti | 2010 | 70% |
|  |  |  |   | Iran (Persia) | 2008 | 20% |   | Iraq | 2010 | 40% |
|  |  |  |   | Turkey | 2008 | 30% |   | Jordan | 2010 | 20% |
|  |  |  |   | Angola | 2009 | 20% |   | Malawi | 2010 | 40% |
|  |  |  |   | Central African Rep. | 2009 | 30% |   | Mauritania | 2010 | 60% |
|  |  |  |   | Nigeria | 2009 | 20% |   | Sudan | 2010 | 60% |
|  |  |  |   | Rwanda | 2009 | 20% |   | Syria | 2010 | 30% |
|  |  |  |   | Uganda | 2009 | 20% |   | Uganda | 2010 | 20% |
|  |  |  |   | Yemen | 2009 | 50% |   | Yemen | 2010 | 20% |
|  |  |  |   |  |  |  |   | China | 2011 | 20% |
|  |  |  |   |  |  |  |   | Nepal | 2011 | 60% |
|  |  |  |   |  |  |  |   | Togo | 2011 | 30% |
|  |  |  |   |  |  |  |   | Bulgaria | 2012 | 90% |
|  |  |  |   |  |  |  |   | Egypt | 2012 | 10% |
|  |  |  |   |  |  |  |   | Thailand | 2012 | 40% |
|  |  |  |   |  |  |  |   | Tunisia | 2012 | 10% |
|  |  |  |   |  |  |  |   | Turkey | 2012 | 10% |
|   |   |   |   |   |   |   |   | Ukraine | 2012 | 50% |