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Economy, corruption or floating voters? Explaining the breakthroughs of anti-establishment reform parties in Eastern Europe

Sean Hanley
s.hanley@ucl.ac.uk
UCL School of Slavonic and East
European Studies
Gower Street
London WC1E 6BT

Allan Sikk

a.sikk@ucl.ac.uk

UCL School of Slavonic and East

European Studies

Gower Street

London WC1E 6BT

Abstract: This paper discusses a new group of parties that we term anti-establishment reform parties (AERPs), which combine moderate social and economic policies with anti-establishment appeals and a desire to change the way politics is conducted. We analyse the electoral breakthroughs of AERPs in Eastern Europe (CEE), the region where AERPs have so been most successful. Examples include the Simeon II National Movement, GERB (Bulgaria), Res Publica (Estonia), New Era (Latvia), TOP09 and Public Affairs (Czech Republic) and Positive Slovenia. We examine the conditions under which such parties broke through in nine CEE states in 1997-2012 using Fuzzy Set Qualitative Comparative Analysis (fsQCA). We find five sufficient causal paths combining high or rising corruption, rising unemployment and party system instability. Rising corruption plays a key role in most pathways but, unexpectedly, AERP breakthroughs are more closely associated with economic good times than bad.

Mobilization against Europe's political establishments is on the rise. This has naturally focused the attention of scholars and policy-makers on the emergence of protest parties and movements. Much discussion has centred on the electoral successes and prospects of populist radical right parties such as Hungary's Jobbik or the True Finns or groupings on the radical left like *SYRIZA* in Greece (Jordan 2010, Wolin 2011). Fears of a radical populist electoral backslash have been especially marked in relation to Central and Eastern Europe (CEE), whose weaker economies and less consolidated democracies appear fertile ground for radical-right and illiberal populist parties after the falling away of EU accession conditionalities (Rupnik 2007, Bohle & Greskovits 2009).

However, alongside conventional radical populists a *major new protest phenomenon* has appeared which so far has been relatively under-researched: successful new parties, which combine mainstream ideology on economic and socio-cultural issues with fierce antiestablishment rhetoric and demands for political reform, transparency and new ways of 'doing politics'. Such parties matter politically. They can achieve overnight electoral breakthroughs on a scale sufficient to restructure party systems and unlike radical populist groupings, even when they do not, often have high coalition potential. Such protest-oriented parties may pose a challenge for democracy, Despite their success, they often struggle to govern and can rapidly break up, sometimes preparing the ground for new protest parties, potentially feeding a spiral of protest and instability (Deegan-Krause 2007, Deegan Krause & Haughton 2009).

New anti-establishment parties of this kind are increasingly breaking through in established democracies, Beppe Grillo's Five Star Movement being perhaps the most spectacular example. However, they have been a feature across the political landscape of Central and Eastern Europe for some years (Mesežnikov, Gyárfášová & Bútorová 2013). Parties such as Simeon II National Movement in Bulgaria founded by the notional heir to the Bulgarian throne (Barany 2002) or Res Publica in Estonia (Taagepera 2006) enjoyed electoral landslides months after launching in 2001 and 2003 and immediately became leading parties of the government. Others, such as Freedom and Solidarity (SaS) in Slovakia (2010) or Public Affairs (VV, 2010) and the ANO movement of billionaire Andrej Babiš (2013) in the Czech Republic have achieved more modest success, but entered government coalitions. Elsewhere in CEE, however, such parties have been conspicuous by their marginality or absence. The experience of the CEE thus represents a natural laboratory for the comparative study of such parties, which cast an important light on the wider prospects of this emerging type of protest party.

We term such parties anti-establishment reform parties (AERPs) and in this article we analyse the conditions under which their electoral breakthroughs occur using fuzzy-set Qualitative Comparative Analysis (fsQCA). We first discuss our conceptualisation of the antiestablishment reform party, briefly relating it to existing concepts such as populism, and discuss parties in CEE that we classify as AERPs. We then present the fsQCA method and briefly review its use in analysing the comparative success of emergent parties across different national and electoral contexts. We then consider a range of causal conditions relevant to AERPs' success including economic crisis, corruption and party system instability and, using fsQCA, pick out those configurations leading to AERP breakthrough. Contrary to our initial expectations we find that breakthroughs can occur during either good or bad economic times and that it is rising perceived corruption which is common to many economic and political contexts leading to AERP breakthrough.

Anti-establishment reform parties

As Deegan-Krause (2010) observes, despite much diversity, there are clear commonalities between many new parties that have broken through in recent elections in CEE making them:

... not exactly a new party family (though in their cultural liberalism and anticorruption emphases they share significant elements) and not exactly a new party type ... but with strong and intersecting elements of both.

How can this phenomenon be conceptualised? Authors who have noticed the phenomenon have often viewed such parties as a sub-type of populism, speaking of 'new/centrist populism' (Pop-Eleches 2010), 'centrist populism' (Učeň et al 2005; Učeň 2007). Others seen them more narrowly as based on a distinct issue dimension: Bågenholm (2013a) for example, terms them 'anti-corruption parties'.

We conceptualize these parties somewhat differently as *anti-establishment reform parties* which exhibit – to different extents – three core features: (1) a politics of *mainstream reformism* (2) usually framed in terms of *anti-establishment* appeal to voters; and (3) *genuine organizational newness*.

By *mainstream reformism* we understand: firstly, that these parties are committed to mainstream models of liberal democracy and the market economy and display neither the populist radical right's inclination to 'illiberal democracy', ethnocentrism and social conservatism (Mudde 2007) nor the anti-capitalism of the radical left (March & Mudde 2005). Secondly, AERPs display a strong commitment to *political reform*, seeking to reform political institutions or change the way politics is conducted. Thus depending on context, they may make appeals to fight corruption; replace corrupt or inefficient elites; create new democratic structures; or simply offer novelty of political style – a 'project of newness' as Sikk (2012) terms it.

Following Abedi (2004: 12) we further understand AERPs as *anti-establishment* parties: parties which present themselves as challengers to establishment parties and emphasize the divide between society and the political establishment.

The third element of our definition is that organizationally AERPs are 'genuinely new'. Here we apply, in slightly extended form of Sikk's (2005: 399) definition of new parties as those that are 'not successor to any previous parliamentary parties, have a novel name and structure, and do not have any important figures from past democratic politics among their major members' (Sikk 2005: 399). We thus exclude alliances and mergers between established parties and parties resulting from breakaways from established parties. ¹

Our stress on anti-establishment stance of AERPs overlaps with the widely used concept of 'populism'. However, for a number of reasons we avoid this label. Even when clearly and minimally defined (see Mudde 2004:542) the concept tends conflate anti-establishment appeal with a set of moralistic anti-political appeals. While often empirically associated, these are, we contend, conceptually distinct and do not logically imply one another, leading to empirical miscategorisation. Although often labelled 'populist', few AERPs make the strongly moralistic distinctions between the political elite and the pure unsullied People said to be a defining characteristic of populist parties. We also take issue with the term's normative connotations (see Sikk 2010 for further discussion).

We thus use the concept of AERP as a broad working category, whose validity will be tested by the search for common causal patterns. To identify AERPs empirically we first identify genuinely new parties and eliminate those regarded as radical-right or radical-left in the literature (Mudde 2007, March 2011) or whose programmes or declarations clearly identify them as such. We then examined party programmes and statements and used case knowledge to distinguish those new parties making anti-establishment reformist appeals from other new parties. We thus excluded a number of new partiers, including radical right groupings (League of Polish Families 2001, *Ataka*, Bulgaria 2005 and *Jobbik*, Hungary 2010) and Green parties (Estonia 2007, Czech Republic 2006).

Strikingly, however, the large majority of successful genuinely new parties in CEE have been AERPs with only a minority of successful new parties in the region emerging on the radical right. Although potentially limiting leverage for distinguishing the conditions of AERP success from those of other types of anti-establishment party, this does this reduce our study to a generic study of new parties Although different types of successful new party may share *some* causal drivers, AERPs are a conceptually distinct subset of new parties whose success is encompassed by a distinct range of causal conditions² which we study through a crossnational, cross-election comparison of distinct pathways.

We identified 21 successful AERPs in parliamentary elections in CEE between 1994 and 2012. In all instances, we refer to a party at the time of the parliamentary election in question as CEE parties, both new and established, can experience considerable changes in their identity and programmatic appeals.

Our data clearly suggests that AERP breakthrough is largely a phenomenon of the approximately the last 15 years. This fits the observations of Pop-Eleches regarding the timing of the success of 'unconventional parties' in CEE, which he explains in broad aggregate terms by the dynamics of 'third generation' post-communist elections: having voted into office and become disappointed with the performance of conventional parties of left and right in successive elections, voters are ready to turn to unconventional new parties (Pop-

Eleches 2010: 223). We accept this logic and focus on 'third generation' elections to the lower houses of CEE parliaments, which took place between September 1997 and December 2012. We list elections and AERPs covered in Table 1.³

Table 1. Electoral support for AERPs 1997-2012

| | | Votes | Set membership |
|----------|---|-------|----------------|
| Election | Successful AERP | % | in BREAKTHRU |
| BGR 2001 | Simenon II Movement (NDSV) | 42.7 | 1.00 |
| BGR 2005 | _ | 0.0 | 0.00 |
| BGR 2009 | Movement for the European | | |
| | Development of Bulgaria (GERB) | 39.7 | 1.00 |
| CZE 2002 | _ | 0.0 | 0.00 |
| CZE 2006 | _ | 0.0 | 0.00 |
| CZE 2010 | TOP09, Public Affairs (VV) | 27.6 | 1.00 |
| EST 1999 | _ | 0.0 | 0.00 |
| EST 2003 | Res Publica | 24.6 | 0.99 |
| EST 2007 | _ | 0.0 | 0.00 |
| EST 2011 | _ | 0.0 | 0.00 |
| HUN 1998 | _ | 0.0 | 0.00 |
| HUN 2002 | _ | 0.0 | 0.00 |
| HUN 2006 | _ | 0.0 | 0.00 |
| HUN 2010 | Politics Can Be Different (LMP) | 7.5 | 0.54 |
| LTU 2000 | New Union (SL) | 19.6 | 0.98 |
| LTU 2004 | Labor Party (DP) | 28.4 | 1.00 |
| LTU 2008 | National Resurrection Party (TPP) | 15.1 | 0.92 |
| LTU 2012 | Way of Courage (DK) | 9.8 | 0.70 |
| LVA 1998 | New Party (JP) | 7.3 | 0.53 |
| LVA 2002 | New Era (JL) | 24.0 | 0.99 |
| LVA 2006 | _ | 0.0 | 0.00 |
| LVA 2010 | _ | 0.0 | 0.00 |
| LVA 2011 | Zatler's Reform Party (ZRP) | 21.3 | 0.99 |
| POL 1997 | _ | 0.0 | 0.00 |
| POL 2001 | Law and Justice (PiS) | 9.5 | 0.68 |
| POL 2005 | _ | 0.0 | 0.00 |
| POL 2007 | _ | 0.0 | 0.00 |
| POL 2011 | Palikot Movement (RP) | 10.5 | 0.74 |
| SVK 2002 | SMER, Alliance of the New Citizen (ANO) | 21.5 | 0.99 |
| SVK 2006 | _ | 0.0 | 0.00 |
| SVK 2010 | Freedom and Solidarity (SaS) | 12.2 | 0.82 |
| SVK 2012 | Ordinary People (OLaNO) | 11.4 | 0.79 |
| SVN 2008 | _ | 0.0 | 0.00 |
| SVN 2011 | Positive Slovenia (PS-LZJ), | | |
| | Virant List (DLGV) | 36.9 | 1.00 |

Source: European Elections Database and websites of national electoral authorities.

Scores for parties with less than 4% were not used, resulting in formal raw score of 0.0.

No AERPs have materialized in Romania which we contend may be related to the markedly low level of democratic freedoms in that country compared to other EU states (as indicated by *Freedom House* political rights and press freedom scores). For the sake of analytical clarity we therefore exclude this country from our analysis.

QCA conditions

For our analysis we use Qualitative Comparative Analysis (QCA), a comparative technique which formalizes the logic of qualitative case-based comparison by linking configurations of causes (conditions) to effects (outcomes) using Boolean algebra and set theory (Ragin 2008, Rihoux & Ragin 2009). QCA is well suited to cross-national comparison of the success levels of a group of new parties as it can address both relatively high numbers of cases *and* high levels of casual complexity, capturing common causes, configurations of causes and multiple pathways to the same outcome (Redding & Viterna 1999, Veughlers & Magnan 2005, Gherghina & Jiglau 2011).

We use the Fuzzy Set form of QCA (fsQCA) where cases are coded in terms of their *degree* of set membership in outcome and causal conditions, rather than the dichotomous presence or absence of conditions and outcomes as in the original Crisp Set version of QCA (csQCA, see Ragin 1987). Degrees of membership are expressed as values ranging from 1.0 (full membership) to 0.0 (full non-membership) with a 'crossover value' of maximum ambiguity set at 0.5. Although expressed numerically, the degrees of set membership are anchored in researchers' theoretically-based judgments, with at least three key anchor points (0, 0.5 and 1) corresponding to a verbal description.⁴

Outcome: AERP electoral breakthrough (BREAKTHRU)

AERPs have considerably greater vote winning potential than the niche or radical parties which earlier QCA studies of new party emergence focus on (Redding & Viterna 1999, Veughlers & Magnan 2005, Gherghina & Jiglau 2011). In the elections we studied, there were two cases – Bulgaria 2001 and 2009 – where a single AERP was supported by more than a third of the electorate and one (Slovenia 2011) where the combined vote for AERPs was above this level. We set the threshold for full membership in the set BREAKTHRU at a level of massive electoral support (30 per cent of votes or more) when the AERP becomes the first or second biggest party and hence a major party in a coalition government or a major opposition party. We set the crossover point (0.5 set membership) at 7 per cent of the vote, which is safely sufficient to win parliamentary representation and to gain a share of seats roughly proportional to the party's vote share, with the AERP becoming a minor governing or opposition party. We deem any election where there is no AERP vote to be fully out of the set (0).

Causal conditions

Previous cross-national QCA studies of the comparative success of Green, far-right and ethnic parties (Redding & Viterna 1999, Veugelers & Magnan 2005, Gherghina & Jiglau 2011) have drawn on ready-made propositions about causes of their success from a large existing literature. For an emerging group of parties such as AERPs, we necessarily draw on a more diverse range of literature: the limited work on AERP-type parties (Učeň et al 2005, Sikk 2012, Bågenholm 2013a); our own case knowledge of CEE; the comparative literatures on new parties, populism, voting behaviour and democratic quality; and recent commentary by academic writers.

Crisis and economic hard time. Many commentators have seen the recent rise of anti-establishment parties across Europe as a response to the pressures exerted by the global economic downturn and the Eurozone crisis (Bartels 2013, Cramme 2013, Van Biezen & Wallace 2013: 294-7). Such expectations echo the political science literature which sees the inability of established actors to deliver reasonable economic conditions as a potential driver of protest voting for new parties. Such patterns of anti-incumbent economic voting generally are, moreover, sharper and more prevalent in CEE (Roberts 2009).

The global economic downturn that started in 2008-9 affected all CEE states following a period of economic expansion across the region. However, the downturn affected CEE states to markedly different degrees and built on pre-recession economies which also varied, particularly in terms of unemployment, reflecting different national trajectories of post-communist reform.

We therefore look at two economic conditions expected to enhance the chances of AERP breakthrough: *economic contraction* (NOGRO) and *rising unemployment* (INCUNEMP). *Economic contraction* (NOGRO) has both direct effects on consumption and levels of public provision and broader socio-political effects in stoking public discontent with incumbents. Extreme levels of economic contraction also create a sense of social crisis which may prompt voters to look for political alternatives.

To operationalise *economic contraction* (NOGRO), we set the threshold for full set membership at a 5 per cent decline in a country's GDP. The minimum threshold ('fully out') is set at a very high level of economic growth of 5 per cent, a phenomenon empirically observed in CEE states at various points since 1989. We set the cross-over point at 0 per cent annual change in GDP, corresponding to a stagnant economy.

We look at the average level of economic growth over two previous years, as the effects of growth might become visible with a slight delay. Likewise, we expect that a period of

economic downturn, especially if marked, may have socio-psychological impact felt even after the economy has subsequently picked up.

A second consequence of economic downturn is increasing unemployment. This directly and immediately impacts those made redundant and their families, but arguably also affects wider groups of voters who fear for their own job security. Even at relatively low levels, sharply increasing unemployment represents a favourable condition for a turn to non-establishment politics and AERP breakthrough. Hence, we incorporate a condition of *sharply increasing unemployment* (INCUNEMP) which we operationalise as the change in unemployment rates over the two years before the election. We set the maximum threshold corresponding to full membership in the set at an increase of 3 percentage points and the lower threshold ('fully out of set') at a 3 percentage point decrease in unemployment levels. The crossover point is set at a near zero decrease of 0.5 percentage points.

These two economic conditions define four distinct socio-economic conjunctures characteristic of different countries and time periods: *economic recession* where GDP is falling and unemployment increasing (NOGRO*UNUNEMP); *economic boom* where GDP is increasing and unemployment falling (~NOGRO*INUNEMP); *restructuring* or *reform* where the economy is growing but shedding jobs (~NOGRO*INCUNEMP); and *recession with a social safety valve* where unemployment falls despite economic contraction (NOGRO*INCUNEMPs) spurred by mass withdrawal from the labour market due to emigration or policies promoting early retirement.

Perceived corruption and distrust. In contrast to explanations which foreground economic recession and growth in unemployment, some authors have interpreted the rise of antiestablishment parties as a crisis of confidence in conventional democratic politics and the honesty and competence of elites (Kaldor & Selchow 2013, Žižek 2013). Perceived corruption and the politicization of corruption have often been linked to the rise of AERP-like parties (Deegan-Krause 2010, Bågenholm 2013a) and, more broadly, to anti-incumbent voting (Slomczynski & Shabad 2012, Bågenholm 2013b). Such anti-corruption sentiment may be understood both in terms of direct concern about corruption and an inchoate sense that political elites are self-serving, untrustworthy and unrepresentative. However, other writers (Blass, Roberts & Shaw 2012, Hooghe & Quintelier 2014) associate high levels of perceived corruption with demobilisation and non-participation benefiting established politicians.

For this reason we distinguish two corruption-related conditions: a social *perception* of *high corruption* (HICORR) and a *substantial increase in perceived levels of corruption* (INCORR). For the purposes of QCA analysis we initially assume both to have a positive effect on AERP breakthrough.

To operationalise levels of perceived corruption we use Transparency International's annual Corruption Perception Index (CPI). Although CPI is often criticized as poorly reflecting 'real' levels of corruption, it is arguably a meaningful measure of the type of public concerns we wish to highlight. We place an election fully in the set of *high levels of perceived corruption* (HICORR) if the CPI score for the election year¹⁰ falls below 3.5, around the worst empirically achieved levels in CEE after 1999 (Romania and Bulgaria). A case is fully out of this set if CPI reaches 5.5 – a benchmark level based on the lowest levels of perceived corruption in the region after this date (achieved only by Slovenia and Estonia). The crossover point of maximum ambiguity (0.5) is 4.6, a figure close to the median corruption rating in CEE across the period.

We deem a case to be fully in the set of elections where there has been a *substantial increase* in the level of perceived corruption (INCCORR) if the CPI score decreases by 0.4 points, indicating a substantial deterioration in corruption. A case is fully out of the condition if a country's CPI score increases by 0.4 points over the preceding two years – that is there is substantial improvement. We set the cross-over point at a decrease in the CPI score of just over zero (0.01), a point where there is neither improvement nor deterioration. 12

Political conditions. In earlier iterations of this work (Hanley & Sikk 2011) we included several conditions relating to the party-electoral context, including the presence of strong radical (right) populist parties and electoral turnout. However, these lacked explanatory power. With increased turnout, it was difficult satisfactorily to distinguish cause and effect, while most electorally significant radical parties in CEE were, on closer inspection, relatively niche groupings without insufficiently broad appeal to compete with AERPs.

In this paper we retain just one such condition: *previous levels of voting for genuinely new parties (HGENP)*. CEE parties and party systems are weakly institutionalised compared to other regions. However, there have been uneven patterns of party system stability *within* the region (Powell & Tucker 2014) which may influence AERP breakthrough. We hypothesise that a history of support for genuinely new parties reflects the presence of a significant pool of 'available' voters, who may perceive an emerging AERP as a credible challenger.

To operationalize this condition we took the maximum support for genuinely new parties in the previous two elections. A case is a full member of this condition (set membership 1.0) if combined support for genuinely new parties was 30 per cent or more – enough to generate one new major party or a number of minor breakthroughs. A case was fully out of this set if no genuinely new party won votes over this period. The crossover point was set at 19 per cent, equating to substantial support for one genuinely new party or more modest support for a range of less successful new parties. ¹³

Empirical analysis

We used the QCA module in R (Dusa & Thiem 2012), to analyse BREAKTHRU in relation to these five socio-political conditions. As expected we found that there was no single necessary condition for AERP breakthrough. This confirms that AERP breakthroughs cannot be accounted for by encompassing narratives often used to frame them: popular reactions to economic hard times or a crisis of party systems and party government. The two single conditions which came closest to being necessary were rising corruption (INCORR) and rising unemployment (INCUNEMP). However, their consistency scores of 0.721 and 0.622 respectively placed them far below what is required for causal necessity. ¹⁴ One *combination* of two conditions (HICORR + INCORR) had high enough consistency (0.91) to be regarded as a necessary condition. This states that AERP breakthrough required *either* rising corruption *or* an already high level of corruption. However, its coverage of cases (0.58) was relatively low. This suggests that accounts which stress the bubbling up of anti-political, anti-corruption sentiments may come closer to general explanation but are far from sufficient.

Seeking sufficient paths to AERP breakthrough.

To find sufficient causal paths we generated a 'truth table' which shows the consistency of the 32 possible combinations of conditions relative to AERPs breakthrough (see Appendix¹⁵). Individual elections are listed in the rows (causal combinations) with which they are most consistent. Rows of logically possible counterfactual combinations of conditions with no matching real life case ('logic remainders') are also shown. To determine which causal configurations should be classified as leading to BREAKTHRU we set a consistency cut-off at 0.78 This is slightly below the widely used cut-off of 0.8, but comfortably above the 0.75 minimum recommended in the literature (Rihoux & Ragin 2008: 87-112, Schneider & Wagemann 2012: 279) and reflects a natural gap in the distribution.

In line with normal fsQCA practice we first examined the *conservative (complex) solution* produced using only empirically-occurring cases. The conservative solution had a high level of consistency (0.85) and relatively broad coverage (0.79 and identified five relatively complex sufficient causal paths for AERP breakthrough. We then simplified our solution by incorporating counter-factual cases. We formulated a *parsimonious solution* including all such counterfactual 'logical remainders' and an *intermediate solution* incorporating only 'good counterfactuals' (Schneider & Wagemann 2012: 168-175,199) offering a middle way between parsimony and empirical complexity. ¹⁶

The 'easy' or 'good' counterfactuals used in the intermediate solution require clearly stated, theoretically or empirically based assumptions about 'directionality': the directional effects that conditions would have in the counter-factual cases. QCA studies focusing on testing existing theory typically derive these off-the-shelf from large mature literatures. However, for a theory-building undertaking such as the comparative analysis of a new emerging group of parties, where the literature was inevitably more limited, we proceeded more cautiously.

In setting directional assumption, we drew on the limited published work on AERPs (largely single country case studies); our own case knowledge of the region; insights that can be gleaned from related literatures on new parties or populism; and careful consideration of patterns produced by the initial conservative solution. Reviewing our conditions, we concluded that four could plausibly be interpreted as contributing to AERP breakthroughs in *either* positive or negative form depending on the wider configuration of causes. Thus, while unstable party systems (HGENP) might (as widely argued in the literature) provide opportunities for new populist-type parties, stable party systems (~HGENP) could do the same in some contexts if they had become rigid, unresponsive or oligarchical (Kaltwasser 2012).

Rising unemployment and economic contraction might, as initially anticipated, drive electoral discontent with establishment parties. However, examining key cases in the conservative solution (Estonia 2003, Lithuania 2004, Lithuania 2008) we judged that in some contexts falling unemployment and a buoyant economy might provide a cue for some voters to turn away from economic issues and focus on questions of corruption and governance – opening up opportunities for AERPs.

As already noted, high corruption can favour new anti-establishment parties in many contexts and demobilise in others. Conversely, we concluded, there might also be contexts where low perceived corruption could also plausibly create circumstances favourable to AERP breakthrough. Low but rapidly increasing corruption (INCCORR *~HICORR) which appears in two of our paths (2, 4) might have an especially shocking and mobilising effect. We therefore set a directional expectation only for rising corruption (INCORR), which theoretical and empirical evidence consistently pointed to as favouring AERP breakthrough.

The intermediate solution (see Table 2) enabled us to identify five distinct contexts favourable to AERP breakthrough.

Table 2: Intermediate solution (BREAKTHRU)

| | | | | | Unique | _ |
|---|-------------------|-------------|-------|----------|----------|---------------|
| | | Consistency | PRI | Coverage | coverage | Cases |
| 1 | ~NOGRO*INCUNEMP* | 0.905 | 0.890 | 0.370 | 0.204 | BGR01, BGR09, |
| | HICORR | | | | | LTU00, POL01, |
| | | | | | | SVK02, SVK10, |
| | | | | | | SVK12 |
| 2 | ~NOGRO*INCCORR* | 0.841 | 0.810 | 0.351 | 0.105 | BGR09,LTU04, |
| | HGENP | | | | | LTU08, LTU12, |
| | | | | | | LVA02, SVK10, |
| | | | | | | SVK12 |
| 3 | ~NOGRO*~INCUNEMP* | 0.889 | 0.870 | 0.157 | 0.053 | EST03, LTU04, |
| | ~HICORR*INCCORR | | | | | LTU12 |
| 4 | NOGRO*INCUNEMP* | 0.831 | 0.793 | 0.150 | 0.132 | CZE10, HUN10, |
| | INCCORR*~HGENP | | | | | SVN11 |
| 5 | NOGRO*HICORR* | 0.985 | 0.984 | 0.073 | 0.056 | LVA11 |
| | INCCORR*~HGENP | | | | | |

Consistency: 0.85, Coverage: 0.81

Path 1: Corrupt socially painful growth (~NOGRO*INCUNEMP*HICORR). This scenario combines rising unemployment (INCUNEMP) with economic growth (~NOGRO) and a background of high perceived corruption (HICORR). This corresponds to a context of apparently successful economic reform or restructuring, whose costs and benefits are, nevertheless, seen as unjustly distributed because of unemployment and high levels of perceived corruption. This experience was largely characteristic of a phase of post-communist reform in some CEE states shortly before EU accession in 2000-2 (Lithuania 2000, Poland 2001, Slovakia 2002) as well as of Slovakia in 2010 and 2012 as it recovered from the 2008-9 recession.

Path 2: Growth but increasing corruption inan unstable party (~NOGRO*INCCORR*HGENP). This path, which covers Lithuania (2004-2012), Latvia 2002), Slovakia (2010, 2012) and Bulgaria (2009) shows economic growth (~NOGRO) coupled with increasing corruption (INCCORR) in an unstable party system (HGENP) favouring AERP breakthrough. The configuration suggests that even where the economy is growing, when corruption is increasing voters will turn to AERPs in large numbers if there is already a tradition of voting for new parties.

Path 3: Low and rising corruption in economic good times (~NOGRO*~INCUNEMP*~HICORR*INCCORR). Path 3 covers three Baltic elections (Estonia 2003, Lithuania 2004, Lithuania 2012) and like path 1 highlights how corruption can interact with a seemingly benign socio-economic climate. In these cases a favourable context

for AERP breakthrough is created by low but rising corruption (~HICORR*INCCORR) and a buoyant economy with both growth and falling unemployment (~NOGRO*~INCUNEMP). Increases in perceived corruption in a relatively low corruption environment we suggest have a galvanising effect, while improvement in the economy allows voters to refocus on issues of corruption and governance.

Path *4*: Recession and rising corruption in rigid systems party (NOGRO*INCUNEMP*INCCORR*~HGENP). Path 4 is distinct sub-regional path featuring only elections in three recession-hit Visegrád states with previously stable party systems – Hungary in 2010, the Czech Republic in 2010 and Slovenia in 2011. These had been generally resistant to AERP breakthroughs until the first elections after the 2008-9 downturn. At this point, a configuration of recession (NOGRO*INCUNEMP), rising perceived corruption (INCCORR) and the previous stability of the established party system (~HGENP) combined to create favourable conditions for AERP breakthrough. In all three cases the inability of (some or all) established parties credibly to respond to economic crisis and their loss of legitimacy because of growing concerns over corruption prepared the ground for AERP breakthrough. Strikingly, in this configuration party stability rather than party system fluidity contributes to AERP breakthrough: long established parties appeared ossified, corrupt, out-oftouch and an obstacle to both the solution of urgent socio-economic problems and longer term modernisation (Batory 2010, Haughton, Novotná & Deegan-Krause 2011, Haughton & Krašovec 2011).

Path 5: Latvia's way? (NOGRO*HICORR*INCCORR*~HGENP). The breakthrough of the Zatlers Reform Party in Latvia's 2011 election appears as a unique case represented by its own a causal path, albeit in some ways one close to the recession and rising corruption in rigid party systems path experienced in Visegrád states (path I4). Here too economic contraction (NOGRO) combined with an increasingly stable, but oligarchical party establishment. However, the economic context was characterised by economic contraction without rising unemployment because of an unusually sharp and deep recession and high levels of emigration. Latvia's path to AERP breakthrough is also characterised by high and increasing perceived corruption (HICORR*INCORR), rather than merely increasing corruption as in path 4.

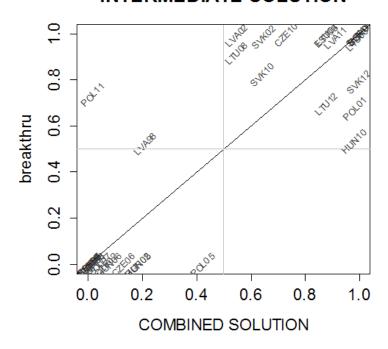
Uncovered cases

There were a small number of unexplained cases not covered by any of the five paths or covered only inconsistently. In the second group we find a few cases of AERP breakthrough (lower half of the top right quadrant of Figure 1), which were more limited in scope than the highly favourable conditions would imply: Poland 2001, Hungary 2010, Slovakia 2012 and Lithuania 2012. As these are members of three different causal pathways they require follow-

up in post-QCA case comparison (Schneider & Wagemann 2012: 305-310). However, both in Poland 2001 and Hungary 2010 dynamic new, social populist and/or radical right parties appeared that differed in style, appeal and organisation from the niche radical right groups found in most CEE countries. Two cases of AERP breakthrough were wholly unexplained by our solution set, the most prominent being the success of the Palikot Movement (RP) in Poland's 2011 election, when growing unemployment, economic growth and low and falling corruption (INCUNEMP*~HICORR*~INCCORR*~HGENP) should have relegated it to marginality.¹⁷

Figure 1





Concluding discussion

This study provides a set of explanations for the anti-establishment reform parties' electoral breakthroughs in 'third generation' elections in CEE since 1997. Our intermediate solution has high levels of overall consistency (0.85) and coverage (0.81) picks out distinct paths which can be interpreted in ways which plausibly fit case knowledge. This suggests that the group of parties we term AERPs does have a degree of coherence and should be regarded as more than a ragbag, residual category of otherwise hard-to-label protest parties.

At the same time our work underlines that early debates (implicitly) framing the rise of such new anti-establishment parties as a reflection *either* of a crisis of (dysfunctional/corrupt) democratic governance *or* the impact of recession and economic hard times are misplaced. Instead, our findings suggest, research needs to focus on the ways in which economic conditions, corruption and patterns of party (in)stability *interact* to facilitate the breakthrough of these parties. In this respect our five sufficient causal paths offer a number of intriguing – and sometimes counterintuitive – findings.

Corruption vs. economics

One pattern is immediately striking: contrary to the view of AERPs as 'crisis parties' they are often not products of economic contraction. Three of the five paths to AERP breakthrough covering 12 cases (combined unique coverage 0.362) take place in a context of economic growth. Conversely, paths 4 and 5 which feature elections taking place against a backdrop of economic contraction cover only four cases (combined unique coverage 0.188). This suggests that rather than damping down anti-political moods, economic good times can give voters space to consider governance issues.

However, the presence of rising corruption (INCORR) in four of the five sufficient paths and the necessity of one corruption-related condition (HICORR + INCORR) suggests a still more different story. This is best seen in the re-presentation of the intermediate solution in Figure 2 which highlights the role of *rising corruption* as the most common driver of AERP breakthrough, albeit one refracted through sets of economic and party-political circumstances.

Figure 2

The importance of INCORR lends qualified support to perspectives stressing the importance of governance structures and citizen-politician relationships, although it also sharply poses the question of *how* and *when* they matter.

Spirals of instability?

Our use of individual elections as cases allows us not only to compare across contexts, but also to look for temporal patterns. We can thus assess the proposition that some CEE party systems will experience repeated cyclical breakthroughs by new anti-establishment parties campaigning on anti-corruption issues (Deegan-Krause 2007; Deegan Krause & Haughton 2009). We find qualified confirmation for this thesis. The pattern appears clearly in the case of Lithuania, which experienced AERP breakthroughs in every 'third generation' election in our sample. Latvia (1998, 2002), Slovakia (2010, 2012) and Bulgaria (2001 and 2009) which had close AERP breakthroughs. However, there is limited evidence of any process of 'increasing returns' of the type envisaged by Deegan-Krause (2007). There were two major linked breakthroughs in Bulgaria: the Simeon II Movement, which disrupted the established party system by breaking through in 2001 (and subsequently declined) did arguably prepare the ground for GERB in 2009. However, repeated breakthroughs in Lithuania and Slovakia did not become greater over time, suggesting that cyclical processes may be relatively weak or can be damped down by other factors.

Our solution also offers insights into the sequencing of the *paths* involved in repeated AERP breakthroughs. Most instances of multiple breakthroughs were covered by paths 1 and 2. However, *initial* breakthroughs in such states (Lithuania 2000, Bulgaria 2001, Poland 2001, Slovakia 2002) were covered by only one path: corrupt socially painful growth (path 1). All cases covered by path 2 (growth with increasing corruption in an unstable party system) were repeat breakthroughs. This suggests that *corrupt socially painful growth* provides an important context for initial AERP breakthrough while rising corruption (regardless of changes in unemployment) in an already destabilised stable party system provides a context for further episodes. This pattern is especially marked in Lithuania where initial AERP breakthrough (the New Union in 2000) was covered only by path 1, while all subsequent breakthroughs were found in path 2.

Party system consolidation – a double-edged sword?

It is also striking that *both* party system stability and instability can contribute to AERP breakthrough in different economic and social contexts. Party system instability (HGENP) contributes to AERP breakthrough in one important causal path (path 3). However, counter-intuitively, we also find that party system *stability* (~HGENP) is in many circumstances conducive to AERP breakthrough. This runs contrary to much literature on parties and party systems in new democracies which assumes that, once established, stability tends to endure by triggering processes of institutionalisation (Mainwaring and Torcal 2006). Stable party systems in CEE thus appear a somewhat mercurial phenomenon which can 'tip' into contributing to their own demise: when established parties fail to deliver growth *and* reduce

perceptions of corruption, many voters turn against them as oligarchical 'dinosaurs'. Alternatively it may simply be that established CEE parties' apparent sustainability was driven by repeat electoral success without any real processes of institutionalisation occurring.

What can stop anti-establishment reform parties?

Under what circumstances can stable party systems block the emergence of successful AERPs? Which causal configurations stymie AERP breakthrough? The absence of AERP breakthrough – the so-called negation of the solution (~BREAKTHRU) – corresponds empirically to the success of a diverse range of established parties and non-AERP challengers. In consequence, the causal paths found in the conservative and intermediate solutions are complex. However, the parsimonious solution (see Table 3) does highlight three paths blocking AERP breakthrough, of which two have broad coverage.

Table 3: Parsimonious solution (~BREAKTHRU)

| | | Consistency | PRI | Coverage | Unique | cases |
|---|---------------------|-------------|-------|----------|----------|---------------|
| | | | | | coverage | |
| 1 | ~HICORR*~INCCORR | 0.849 | 0.840 | 0.414 | 0.328 | EST99, EST07, |
| | | | | | | HUN98,HUN02, |
| | | | | | | HUN06,POL97, |
| | | | | | | SVN08, POL11 |
| 2 | ~INCUNEMP*~INCCORR* | 0.864 | 0.852 | 0.266 | 0.179 | BGR05, EST07, |
| | HGENP | | | | | LVA06, SVK06 |
| 3 | NOGRO*HGENP | 0.902 | 0.892 | 0.121 | 0.111 | EST11; LVA10 |

Consistency: 0.86, coverage: 0.71

Path 1 confirms the importance of perceived corruption, suggesting that established parties will face no strong AERP challenge where *corruption is seen as low and decreasing*. The second path tells a similar story combining decreasing corruption and unemployment (~INCORR* ~INCUNEMP), but also a history of new party success (HGENP). This can be interpreted as *AERP fatigue* as all four cases on path 2 were preceded by the significant breakthrough by an AERP which then assumed government office. ¹⁹ The surest strategy for established parties in CEE – or for those seeking to rescue its two decades long experiment in West European style party politics – is one focussed on countering perceptions of rampant and rising corruption.

The importance of INCORR in AERP breakthroughs (and ~INCORR in non-breakthroughs) suggests the phenomenon may be confined to regions with weak and corrupt (or corruptible) institutions such as Eastern or Southern Europe with limited potential in core West European states. Much, however, depends on whether changes in perceived corruption reflect the 'real'

performance of institutions and elites. If perceptions of 'corruption' merely mask deeper antipolitical resentments we may expect AERPs to become a more widespread phenomenon.

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Notes

- ¹ We understand breakaway parties as those where a majority of parliamentary deputies come from a single established party. This differs slightly from Sikk (2005: 399) who also excludes 'participation by prime ministers and significant portions of cabinet ministers and members of parliament'.
- ² Similarly, comparative research on CEE radical right parties highlights factors specific to this group (for example, the presence of national minorities which lack relevance for the success of other new parties, see Bustikova & Kitschelt 2009; Piro 2014).
- ³ We classify Slovakia's Ordinary People (OL'aNO) as an AERP in 2012, although four OL'aNO representatives were elected in 2010 (thanks to preference votes) on another party's list. The TOP09 party is sometimes regarded as a breakaway from the Czech Christian Democrats (KDU-ČSL). However, although founded by a leading figure in KDU-ČSL, the majority of TOP09 deputies elected in 2010 had no association with KDU-ČSL.
- ⁴ As the raw data for our conditions is continuous, we calculate set memberships following the direct calibration technique proposed by Ragin (2008: 85-105).
- ⁵ Where two AERPs were successful we used their combined vote share for coding.
- ⁶ Due to data limitations, we only coded support for AERPs in cases where they entered the parliament. However, analysis revealed that no AERPs that did not enter the parliament received more than 1 percent of the vote.
- ⁷ We do not include the level of unemployment as a condition. Levels of background unemployment can vary significantly between states and, while having undeniable social and political impacts, can quickly become 'normalised'.
- ⁸ We set the cross-over point at a marginal improvement of unemployment situation, as it could be argued that unemployment needs to drop by more than 0.5 percentage points to be perceived as improved.
- ⁹ Data from the Quality of Government dataset. For three elections in 1997 and 1998, change in corruption could not be calculated as CPI scores were unavailable. World Bank global governance indicators suggest that Poland and Hungary saw substantial reductions in corruption levels (INCCORR = 0.01), while Latvia saw modest decline in perceived corruption (0.33).
- ¹⁰ Data in CPI reports is usually gathered in the year preceding the headline year. We applied the CPI score for the year preceding the headline year.
- ¹¹ CPI changes should not be used to establish trends in actual levels of corruption. However, we believe it is acceptable to use them for the broad direction in perceived corruption. In the elections studied, CPI trends correspond to other indices such as World Bank Control of Corruption measures. Case knowledge also confirms that it is generally a reliable indicator.

¹² In a number of cases the CPI score did not change. We thus followed the same logic as with unemployment change. We argue that the CPI score needs to decrease slightly before an actual improvement in corruption levels is registered among voters.

¹³ The set memberships of all elections in the causal conditions included the analysis are included in Appendix.

¹⁴ A consistency score of 0.9 – widely seen as minimum level at which a condition can be regarded as necessary (Schneider & Wagemann 2012: 330)

¹⁵ Also available at http://www.homepages.ucl.ac.uk/~tjmsasi/.

¹⁶ We also reviewed these counterfactuals for empirically impossible combinations and 'contradictory simplifying assumptions' (CSAs). We identified no none of the former and found 'contradictory assumptions' for which we specified whether they should lead to BREAKTHRU or ~BREAKTHRU (Schneider & Wagemann 2012: 203-211)

¹⁷ The success of the Palikot Movement may be attributed to the exceptional strength of secular-religious divisions in Poland.

¹⁸ Conservative and intermediate solutions for ~BREAKTHRU are included in Appendix.

¹⁹ Res Publica in Estonia (2003), New Era in Latvia (2002), Simeon II Movement in Bulgaria (2001) and the Alliance of the New Citizen in Slovakia (2002). The third path *economic contraction in an unstable party system* (NOGRO*HGENP) covers only Latvia in 2010 and Estonia in 2011 and suggests that voters in unstable party systems can lose a taste for political novelty in (or shortly after) periods of economic contraction.

AppendixSet memberships for the five conditions and outcome (BREAKTHRU)

| Election | NOGRO | INCUNEMP | HICORR | INCCORR | HGENP | BREAKTHRU |
|----------|-------|----------|--------|---------|-------|-----------|
| BGR01 | 0.005 | 1.000 | 1.000 | 0.000 | 0.019 | 1.000 |
| BGR09 | 0.000 | 0.688 | 1.000 | 0.999 | 1.000 | 1.000 |
| SVN11 | 0.990 | 0.996 | 0.000 | 0.996 | 0.010 | 1.000 |
| LTU04 | 0.000 | 0.035 | 0.348 | 0.875 | 0.920 | 0.998 |
| CZE10 | 0.726 | 0.999 | 0.132 | 0.996 | 0.021 | 0.998 |
| EST03 | 0.000 | 0.035 | 0.002 | 0.875 | 0.038 | 0.995 |
| LVA02 | 0.000 | 0.201 | 1.000 | 0.544 | 0.666 | 0.994 |
| SVK02 | 0.034 | 0.644 | 0.999 | 0.544 | 0.048 | 0.987 |
| LVA11 | 1.000 | 0.035 | 0.909 | 1.000 | 0.005 | 0.987 |
| LTU00 | 0.011 | 0.995 | 0.998 | 0.066 | 0.258 | 0.978 |
| LTU08 | 0.000 | 0.799 | 0.222 | 0.544 | 0.997 | 0.919 |
| SVK10 | 0.362 | 1.000 | 0.683 | 0.999 | 0.999 | 0.824 |
| SVK12 | 0.005 | 0.549 | 0.990 | 1.000 | 0.996 | 0.790 |
| POL11 | 0.022 | 0.977 | 0.012 | 0.000 | 0.002 | 0.739 |
| LTU12 | 0.007 | 0.000 | 0.222 | 0.875 | 0.997 | 0.699 |
| POL01 | 0.002 | 1.000 | 0.979 | 1.000 | 0.004 | 0.679 |
| HUN10 | 0.983 | 1.000 | 0.042 | 0.976 | 0.002 | 0.536 |
| LVA98 | 0.000 | 0.000 | 1.000 | 0.330 | 0.207 | 0.526 |
| BGR05 | 0.000 | 0.000 | 0.979 | 0.180 | 1.000 | 0.001 |
| CZE02 | 0.006 | 0.059 | 0.995 | 1.000 | 0.010 | 0.001 |
| CZE06 | 0.000 | 0.126 | 0.909 | 0.001 | 0.009 | 0.001 |
| EST07 | 0.000 | 0.001 | 0.000 | 0.000 | 0.979 | 0.001 |
| EST11 | 0.999 | 0.099 | 0.000 | 0.875 | 0.979 | 0.001 |
| EST99 | 0.000 | 0.966 | 0.001 | 0.000 | 0.038 | 0.001 |
| HUN02 | 0.004 | 0.431 | 0.012 | 0.180 | 0.014 | 0.001 |
| HUN06 | 0.002 | 0.977 | 0.075 | 0.039 | 0.007 | 0.001 |
| HUN98 | 0.094 | 0.012 | 0.026 | 0.001 | 0.014 | 0.001 |
| LVA06 | 0.000 | 0.001 | 0.956 | 0.001 | 0.993 | 0.001 |
| LVA10 | 1.000 | 1.000 | 0.683 | 0.996 | 0.993 | 0.001 |
| POL05 | 0.002 | 0.020 | 1.000 | 1.000 | 0.416 | 0.001 |
| POL07 | 0.001 | 0.000 | 0.999 | 0.039 | 0.416 | 0.001 |
| POL97 | 0.000 | 0.012 | 0.002 | 0.001 | 0.003 | 0.001 |
| SVK06 | 0.000 | 0.000 | 0.909 | 0.000 | 0.999 | 0.001 |
| SVN08 | 0.000 | 0.046 | 0.000 | 0.000 | 0.010 | 0.001 |

Truth table (outcome: BREAKTHRU)

| | | | | | | | | 1 | | |
|--|--|---|--|--|---|---|--|---|---|---|
| Row number | NOGRO | INCUNEMP | HICORR | INCCORR | HGENP | OUT | п | incl | PRI | cases |
| 23 | 1 | 0 | 1 | 1 | 0 | 1 | 1 | 0.989 | 0.988 | LVA11 |
| 16 | 0 | 1 | 1 | 1 | 1 | 1 | 3 | 0.982 | 0.977 | BGR09,SVK10,SVK12 |
| 12 | 0 | 1 | 0 | 1 | 1 | 1 | 1 | 0.977 | 0.968 | LTU08 |
| 14 | 0 | 1 | 1 | 0 | 1 | 1 | 0 | 0.955 | 0.946 | |
| 31 | 1 | 1 | 1 | 1 | 0 | ? | 0 | 0.940 | 0.910 | |
| 4 | 0 | 0 | 0 | 1 | 1 | 1 | 2 | 0.929 | 0.907 | LTU04,LTU12 |
| 13 | 0 | 1 | 1 | 0 | 0 | 1 | 2 | 0.917 | 0.914 | BGR01,LTU00 |
| 10 | 0 | 1 | 0 | 0 | 1 | ? | 0 | 0.865 | 0.838 | |
| 24 | 1 | 0 | 1 | 1 | 1 | ? | 0 | 0.857 | 0.663 | |
| 29 | 1 | 1 | 1 | 0 | 0 | ? | 0 | 0.838 | 0.604 | |
| 27 | 1 | 1 | 0 | 1 | 0 | 1 | 3 | 0.834 | 0.798 | CZE10,HUN10,SVN11 |
| 3 | 0 | 0 | 0 | 1 | 0 | 1 | 1 | 0.827 | 0.822 | EST03 |
| 19 | 1 | 0 | 0 | 1 | 0 | ? | 0 | 0.801 | 0.741 | |
| | | | | | | | | | | |
| 15 | 0 | 1 | 1 | 1 | 0 | 1 | 2 | 0.798 | 0.752 | POL01,SVK02 |
| 15 8 | 0 | 0 | 1 | 1 | 0 | 1 | 2 | 0.798 0.781 | 0.752 0.707 | POL01,SVK02 LVA02 |
| | | | | | | | _ | | | |
| 8 | 0 | 0 | 1 | 1 | 1 | 1 | 1 | 0.781 | 0.707 | |
| 8 30 | 0 | 0 | 1 | 1 | 1 | ? | 1 0 | 0.781 0.775 | 0.707 0.605 | |
| 8 30 22 | 0 1 1 | 0 1 0 | 1 1 1 | 0 0 | 1 1 1 | ? | 1 0 0 | 0.781 0.775 0.762 | 0.707 0.605 0.554 | |
| 30 22 21 | 0 1 1 1 | 0 1 0 0 | 1 1 1 | 1 0 0 | 1 1 1 0 | ? ? | 1 0 0 | 0.781 0.775 0.762 0.676 | 0.707 0.605 0.554 0.421 | |
| 8 30 22 21 11 | 0 1 1 1 0 | 0 1 0 0 | 1 1 1 1 0 | 1 0 0 0 | 1 1 1 0 0 | 1 ? ? ? | 1 0 0 0 | 0.781 0.775 0.762 0.676 0.651 | 0.707 0.605 0.554 0.421 0.610 | |
| 8 30 22 21 11 25 | 0 1 1 1 0 1 | 0 1 0 0 1 1 | 1 1 1 1 0 0 | 1 0 0 0 1 | 1 1 1 0 0 | 1 ? ? ? ? | 1 0 0 0 0 | 0.781 0.775 0.762 0.676 0.651 0.622 | 0.707 0.605 0.554 0.421 0.610 0.139 | |
| 8 30 22 21 11 25 28 | 0 1 1 1 0 1 | 0 1 0 0 1 1 | 1 1 1 1 0 0 | 1 0 0 0 1 0 | 1 1 0 0 0 | 1 ? ? ? ? ? 0 | 1 0 0 0 0 0 | 0.781 0.775 0.762 0.676 0.651 0.622 0.469 | 0.707 0.605 0.554 0.421 0.610 0.139 0.288 | LVA02 |
| 8 30 22 21 11 25 28 5 | 0 1 1 1 0 1 1 | 0 1 0 0 1 1 1 | 1 1 1 0 0 0 | 1 0 0 0 1 0 | 1 1 0 0 0 0 | 1 ? ? ? ? 0 ? | 1 0 0 0 0 0 0 | 0.781 0.775 0.762 0.676 0.651 0.622 0.469 0.444 | 0.707 0.605 0.554 0.421 0.610 0.139 0.288 0.325 | LVA02 CZE06,LVA98,POL07 |
| 8 30 22 21 11 25 28 5 | 0 1 1 1 0 1 1 0 0 | 0 1 0 0 1 1 1 0 0 | 1 1 1 0 0 0 1 | 1 0 0 0 1 0 1 0 | 1 1 0 0 0 1 0 | 1 ? ? ? ? ? 0 ? 0 | 1 0 0 0 0 0 0 0 3 | 0.781 0.775 0.762 0.676 0.651 0.622 0.469 0.444 0.414 | 0.707 0.605 0.554 0.421 0.610 0.139 0.288 0.325 0.320 | CZE06,LVA98,POL07 CZE02,POL05 |
| 8 30 22 21 11 25 28 5 7 32 | 0 1 1 1 0 1 1 0 0 | 0 1 0 0 1 1 1 0 0 | 1 1 1 0 0 0 1 1 | 1 0 0 0 1 0 1 0 1 | 1 1 0 0 0 0 1 0 | 1 ? ? ? ? ? 0 ? 0 | 1 0 0 0 0 0 0 0 3 2 | 0.781 0.775 0.762 0.676 0.651 0.622 0.469 0.444 0.414 | 0.707 0.605 0.554 0.421 0.610 0.139 0.288 0.325 0.320 0.246 | CZE06,LVA98,POL07 CZE02,POL05 LVA10 |
| 8 30 22 21 11 25 28 5 7 32 2 | 0 1 1 1 0 1 1 0 0 0 1 | 0 1 0 0 1 1 1 0 0 0 | 1 1 1 0 0 0 1 1 1 | 1 0 0 0 1 0 1 0 1 | 1 1 0 0 0 1 0 0 1 | 1 ? ? ? ? ? 0 ? 0 0 0 | 1 0 0 0 0 0 0 0 3 2 1 | 0.781 0.775 0.762 0.676 0.651 0.622 0.469 0.444 0.414 0.393 0.297 | 0.707 0.605 0.554 0.421 0.610 0.139 0.288 0.325 0.320 0.246 0.187 | LVA02 CZE06,LVA98,POL07 CZE02,POL05 LVA10 EST07 |
| 8 30 22 21 11 25 28 5 7 32 2 | 0 1 1 1 0 1 1 0 0 0 0 1 | 0 1 0 0 1 1 1 0 0 0 1 | 1 1 1 0 0 0 1 1 1 1 0 | 1 0 0 0 1 0 1 0 1 1 0 | 1 1 0 0 0 1 0 0 1 1 1 | 1 ? ? ? ? ? 0 ? 0 0 0 0 | 1 0 0 0 0 0 0 0 3 2 1 1 3 | 0.781 0.775 0.762 0.676 0.651 0.622 0.469 0.444 0.414 0.393 0.297 0.274 | 0.707 0.605 0.554 0.421 0.610 0.139 0.288 0.325 0.320 0.246 0.187 0.189 | LVA02 CZE06,LVA98,POL07 CZE02,POL05 LVA10 EST07 |
| 8 30 22 21 11 25 28 5 7 32 2 6 | 0 1 1 1 0 1 1 0 0 0 1 0 0 | 0 1 0 0 1 1 1 0 0 0 1 0 | 1 1 1 0 0 0 1 1 1 0 0 | 1 0 0 0 1 0 1 0 1 1 0 0 | 1 1 0 0 0 0 1 0 1 1 0 | 1 ? ? ? ? ? 0 ? 0 0 0 0 0 | 1 0 0 0 0 0 0 0 3 2 1 1 3 | 0.781 0.775 0.762 0.676 0.651 0.622 0.469 0.444 0.414 0.393 0.297 0.274 0.252 | 0.707 0.605 0.554 0.421 0.610 0.139 0.288 0.325 0.320 0.246 0.187 0.189 0.032 | CZE06,LVA98,POL07 CZE02,POL05 LVA10 EST07 BGR05,LVA06,SVK06 |
| 8 30 22 21 11 25 28 5 7 32 2 6 17 | 0 1 1 1 0 1 1 0 0 1 0 1 0 0 1 | 0 1 0 0 1 1 1 0 0 1 0 0 1 | 1 1 1 0 0 0 1 1 1 1 0 0 | 1 0 0 0 1 0 1 0 1 1 0 0 0 0 | 1 1 0 0 0 0 1 0 1 1 1 0 | 1 ? ? ? ? ? 0 ? 0 0 0 0 | 1 0 0 0 0 0 0 0 3 2 1 1 3 0 | 0.781 0.775 0.762 0.676 0.651 0.622 0.469 0.444 0.414 0.393 0.297 0.274 0.252 0.239 | 0.707 0.605 0.554 0.421 0.610 0.139 0.288 0.325 0.320 0.246 0.187 0.189 0.032 | CZE06,LVA98,POL07 CZE02,POL05 LVA10 EST07 BGR05,LVA06,SVK06 |
| 8 30 22 21 11 25 28 5 7 32 2 6 17 9 26 | 0 1 1 1 0 1 0 0 1 0 0 1 0 0 1 0 0 1 | 0 1 0 0 1 1 1 0 0 0 1 0 0 0 1 | 1 1 1 0 0 0 1 1 1 0 0 0 1 1 0 0 0 0 0 0 | 1 0 0 0 1 0 1 0 1 1 0 0 0 0 0 0 0 0 0 0 | 1 1 1 0 0 0 1 0 1 1 1 0 0 | 1 ? ? ? ? ? 0 0 0 0 0 0 0 | 1 0 0 0 0 0 0 0 3 2 1 1 3 0 | 0.781 0.775 0.762 0.676 0.651 0.622 0.469 0.444 0.414 0.393 0.297 0.274 0.252 0.239 0.163 | 0.707 0.605 0.554 0.421 0.610 0.139 0.288 0.325 0.320 0.246 0.187 0.189 0.032 0.168 0.052 | CZE06,LVA98,POL07 CZE02,POL05 LVA10 EST07 BGR05,LVA06,SVK06 |

Notes: bold – rows above consistency cut-off (threshold); italics – rows examined because of contradictory simplifying assumptions.

Truth table (outcome: ~BREAKTHRU)

| Row number | NOGRO | INCUNEMP | HICORR | INCCORR | HGENP | OUT | u | incl | PRI | cases |
|------------|-------|----------|--------|---------|-------|-----|---|-------|-------|-------------------------|
| 20 | 1 | 0 | 0 | 1 | 1 | 1 | 1 | 0.996 | 0.996 | EST11 |
| 18 | 1 | 0 | 0 | 0 | 1 | ? | 0 | 0.976 | 0.973 | |
| 17 | 1 | 0 | 0 | 0 | 0 | 1 | 0 | 0.975 | 0.968 | |
| 26 | 1 | 1 | 0 | 0 | 1 | ? | 0 | 0.954 | 0.948 | |
| 1 | 0 | 0 | 0 | 0 | 0 | 1 | 4 | 0.947 | 0.947 | HUN98,HUN02,POL97,SVN08 |
| 25 | 1 | 1 | 0 | 0 | 0 | 1 | 0 | 0.939 | 0.861 | |
| 2 | 0 | 0 | 0 | 0 | 1 | 1 | 1 | 0.838 | 0.813 | EST07 |
| 6 | 0 | 0 | 1 | 0 | 1 | 1 | 3 | 0.831 | 0.811 | BGR05,LVA06,SVK06 |
| 32 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 0.802 | 0.754 | LVA10 |
| 28 | 1 | 1 | 0 | 1 | 1 | ? | 0 | 0.786 | 0.712 | |
| 9 | 0 | 1 | 0 | 0 | 0 | 1 | 3 | 0.779 | 0.759 | EST99,HUN06,POL11 |
| 21 | 1 | 0 | 1 | 0 | 0 | ? | 0 | 0.764 | 0.579 | |
| 29 | 1 | 1 | 1 | 0 | 0 | ? | 0 | 0.752 | 0.396 | |
| 7 | 0 | 0 | 1 | 1 | 0 | 0 | 2 | 0.725 | 0.680 | CZE02,POL05 |
| 24 | 1 | 0 | 1 | 1 | 1 | ? | 0 | 0.718 | 0.337 | |
| 22 | 1 | 0 | 1 | 0 | 1 | ? | 0 | 0.704 | 0.446 | |
| 5 | 0 | 0 | 1 | 0 | 0 | 0 | 3 | 0.684 | 0.617 | CZE06,LVA98,POL07 |
| 30 | 1 | 1 | 1 | 0 | 1 | ? | 0 | 0.655 | 0.395 | |
| 8 | 0 | 0 | 1 | 1 | 1 | 0 | 1 | 0.471 | 0.293 | LVA02 |
| 11 | 0 | 1 | 0 | 1 | 0 | ? | 0 | 0.454 | 0.390 | |
| 19 | 1 | 0 | 0 | 1 | 0 | ? | 0 | 0.429 | 0.259 | |
| 31 | 1 | 1 | 1 | 1 | 0 | ? | 0 | 0.394 | 0.090 | |
| 12 | 0 | 1 | 0 | 1 | 1 | 0 | 1 | 0.312 | 0.032 | LTU08 |
| 10 | 0 | 1 | 0 | 0 | 1 | ? | 0 | 0.303 | 0.162 | |
| 4 | 0 | 0 | 0 | 1 | 1 | 0 | 2 | 0.263 | 0.033 | LTU04,LTU12 |
| 15 | 0 | 1 | 1 | 1 | 0 | 0 | 2 | 0.249 | 0.074 | POL01,SVK02 |
| 16 | 0 | 1 | 1 | 1 | 1 | 0 | 3 | 0.227 | 0.023 | BGR09,SVK10,SVK12 |
| 14 | 0 | 1 | 1 | 0 | 1 | 0 | 0 | 0.211 | 0.054 | |
| 3 | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 0.199 | 0.178 | EST03 |
| 27 | 1 | 1 | 0 | 1 | 0 | 0 | 3 | 0.193 | 0.015 | CZE10,HUN10,SVN11 |
| 13 | 0 | 1 | 1 | 0 | 0 | 0 | 2 | 0.115 | 0.086 | BGR01,LTU00 |
| 23 | 1 | 0 | 1 | 1 | 0 | 0 | 1 | 0.059 | 0.012 | LVA11 |

Notes: bold – rows above consistency cut-off (threshold); italics – rows examined because of contradictory simplifying assumptions.

Parsimonious solution (BREAKTHRU)

| | | | | | Unique | |
|---|----------------------------|-------------|-------|----------|----------|---|
| | | Consistency | PRI | Coverage | coverage | cases |
| 1 | ~NOGRO*INCCORR* HGENP | 0.841 | 0.810 | 0.351 | 0.085 | BGR09 LTU04 LTU08 LTU12 LVA02 SVK10 SVK12 |
| 2 | NOGRO*INCCORR* ~HGENP | 0.872 | 0.851 | 0.211 | 0.057 | CZE10, HUN10, LVA11, SVN11, |
| 3 | ~NOGRO*INCUNEMP* HICORR | 0.905 | 0.890 | 0.370 | 0.203 | BGR01, BGR09, LTU00, POL01, SVK02, SVK10, SVK12 |
| 4 | ~HICORR*INCCORR* ~HGENP | 0.839 | 0.815 | 0.222 | 0.009 | CZE10, EST03, HUN10, SVN11 |
| 5 | ~NOGRO*~HICORR* INCCORR | 0.914 | 0.897 | 0.219 | 0.000 | EST03, LTU04, LTU08, LTU12 |

Consistency: 0.85, Coverage: 0.81

$Conservative \ solution \ (\hbox{\simBREAKTHRU})$

| | | | | | Unique | |
|---|-------------------|-------------|-------|----------|----------|---------------|
| | | Consistency | PRI | Coverage | coverage | cases |
| 1 | | | | | | HUN98,HUN02, |
| | ~NOGRO*~HICORR* | 0.867 | 0.861 | 0.328 | 0.320 | POL97,SVN08; |
| | ~INCCORR*~HGENP | 0.807 | 0.001 | 0.526 | 0.320 | EST99,HUN06, |
| | | | | | | POL11 |
| 2 | ~NOGRO*~INCUNEMP* | 0.861 | 0.848 | 0.259 | 0.250 | EST07; BGR05, |
| | ~INCCORR*HGENP | 0.801 | 0.040 | 0.239 | 0.230 | LVA06,SVK06 |
| 3 | NOGRO*~INCUNEMP* | | | | | |
| | ~HICORR* | 0.996 | 0.996 | 0.050 | 0.048 | EST11 |
| | INCCORR*HGENP | | | | | |
| 4 | NOGRO*INCUNEMP* | | | | | |
| | HICORR*INCCORR | 0.802 | 0.754 | 0.050 | 0.047 | LVA10 |
| | *HGENP | | | | | |

Consistency: 0.88, coverage: 0.68

Intermediate solution (~BREAKTHRU)

| | | | | | Unique | |
|---|-------------------|-------------|-------|----------|----------|---------------|
| | | Consistency | PRI | Coverage | coverage | Cases |
| 1 | | | | | | EST99, HUN98, |
| | ~HICORR* | 0.868 | 0.862 | 0.334 | 0.325 | HUN02, HUN06, |
| | ~INCCORR*~HGENP | 0.808 | 0.802 | 0.334 | 0.323 | POL97, POL11, |
| | | | | | | SVN08 |
| 2 | NOGRO*HICORR* | 0.803 | 0.754 | 0.050 | 0.047 | LVA10 |
| | INCCORR*HGENP | 0.803 | 0.734 | 0.030 | 0.047 | LVAIO |
| 3 | ~NOGRO*~INCUNEMP* | 0.861 | 0.848 | 0.259 | 0.250 | BGR05, EST07, |
| | ~INCCORR*HGENP | 0.001 | 0.040 | 0.239 | 0.230 | LVA06, SVK06 |
| 4 | NOGRO*~INCUNEMP* | 0.974 | 0.972 | 0.051 | 0.047 | EST11 |
| | INCCORR*HGENP | 0.974 | 0.972 | 0.031 | 0.047 | ESTII |

Consistency: 0.88, Coverage: 0.68