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Simply a Matter of Luck & Looks? Predicting Elections when Both the World Economy and the Psychology of Faces Count

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Abstract

Economic research shows that candidates have a higher chance of getting (re-)elected when they have the luck that the world economy does well even though this is beyond their control and unrelated to their competence. Psychological research demonstrates that candidates increase their chances if they have the right looks, a facial characteristic that is also unrelated to a politician's actual policies. We combine these two strands of literature by assessing the relative strength of luck and looks. Moreover, we take the moderating effect of the electoral system into account. Using a sample of 196 elections for 44 countries between 1979-1999, results show that looks matter only in majority systems whereas luck ceases to be relevant at all. Economic competence does matter in representative systems. These results hold after controlling for the interaction of luck, looks and competence with variables that proxy for the cross-country variation in the well-informedness of voters.

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Although we would like to assume that voters are well-informed individuals which make thorough and consistent choices based solely on the actual competence and policies of politicians, classic findings demonstrate that most voters are largely ignorant about political issues (Campbell, Converse, Miller, and Stokes 1960; Converse 1964). The quest for what then predicts electoral success has been omnipresent ever since. Numerous methods, models and theories were developed (Armstrong 2001) that try to link election outcomes to a limited set of economic and political variables that are deemed to reflect actual policies or actions being taken by the candidates or their parties (see e.g. Abramovitz 2012; De Haan and Klomp 2013; Downs 1957; Fair 2009; Graefe, Armstrong, Jones and Cuzan 2014; Klarner 2008; Kramer 1971; Stigler 1973).

The central notion in these models is that voters choose a candidate or party based on their 'highest expected future utility' (Fair 2009, p. 56). Voters will base their preferences on a limited number of variables, like the state of the economy as reflected by inflation or unemployment or the actual stance of fiscal policy, since they simply cannot take all available information into account (Fair 2009). But even though the information set of voters is limited, they are at least to some extent always assumed to base their decisions on outcome or policy variables that can be attributed to the actual performance of politicians. Stronger still, since politicians know that voters cast their vote based on actual policies, they use these policies to try influence their (re)election chances (e.g. De Haan and Klomp 2013).

The models mentioned above typically focus on the impact of *national* economic conditions during the term preceding the election. Leigh (2009) was among the first to add the world economy as a relevant variable in deciding national elections. In a sample of 268 elections he showed that the growth of the world economy outperforms national economic growth in explaining electoral success. Leigh's result unmistakably flies in the face of those election models predicting that voters mostly or even only attach importance to variables that are under control of the politicians.

Evidently, economic models like the one from Leigh (2009) accept that voters are confronted with too much information and therefore simplify the decision process by relying on a limited set of

decision variables and on simple decision rules and heuristics (Kahneman, Slovic and Tversky 1982). Remarkably, a similar perspective on the limitations of human beings with respect to voting decisions has evolved in psychological research. Several studies show that people's voting behavior can be predicted by merely the physical appearance of political candidates, like their height (Saad 2003) or their voice (Gregory and Gallagher, 2002). Especially, there is overwhelming evidence that faces of politicians play an important role in judgments and decision-making (e.g. Antonakis and Dalgas 2009; Ballew and Todorov 2007; Banducci et al. 2008; Berggren, Jordahl and Poutvaara 2010; Todorov et al. 2005). Facial appearance leads to a judgment on perceived competence, and this is the main predictor for electoral success.

Although the underlying models and research methodology of say Leigh (2009) and Antonakis and Dalgas (2009) are very different, both approaches are strikingly comparable in their claim that election outcomes are driven by respectively candidates' (economic) *luck* or (facial) *looks*. Both papers do, however, ignore the electoral system in their empirical analysis. This is remarkable, because literature in political science (Lijphart 1971, 1990) as well as political economy (De Haan and Klomp 2013; Person and Tabellini 2003, 2004) teaches us that for understanding political outcomes like election results, we must acknowledge the fact that political institutions and hence electoral systems (like majority or representative voting) differ markedly between countries. Knutsen (2011) for instance shows that for a system with proportional representation (PR) there is a substantial positive effect on economic growth, but this effect is not found for presidentialism or majority parliamentarism. Whether electoral systems and forms of government really 'cause' economic growth is matter of debate (Acemoglu 2005), but it is clear that economic variables not independent from of the set of national political institutions. In the psychological domain, institutional variation is also typically ignored when predicting elections. One exception is the study of Lawson, Lenz, Baker and Myers (2010), they indicate that electoral rules indeed moderate the degree to which voters rely on the appearance of candidates, since ´looks´ mattered more in systems where electoral rules encourage personal voting.

The goal of this paper is twofold. First, we will simultaneously analyze the relevance of economic and psychological variables for predicting election outcomes. We will test the two major categories of variables that are beyond the control of (almost) all national politicians: a) on the macro level, the state of the world economy that is exogenous for national politicians - what we call *luck*, and b) on the micro level, the facial appearance of the candidate - what we call *looks*. While acknowledging that actual policies or actions by politicians do of course also matter for their (re)election prospects, we deliberately focus only the possible relevance of these two "givens". Based on the work of Benjamin and Shapiro (2009), we a priori expect that both predictors could contribute to predicting elections. To our knowledge, our paper is the first to combine and compare the relative strength of both approaches to predict election outcomes[2]. Based on Leigh (2009), we will not only measure economic luck (the impact of the world GDP growth on national elections), but also economic *competence* (the difference between national and world GDP growth and its impact on national elections). As a second goal of the paper, we add an institutionalist perspective, building on the political science and political economy literature, by allowing the electoral systems to vary across countries. By combining insights from the psychology, political science and political economy literature, we propose that this will lead to better understanding of election outcomes.

We do this by building upon the work of Leigh (2009), since this is the only paper that tests for the relevance of economic luck (and competence) across national elections for a large sample of countries over time (Collier and Hoeffler 2013). We extend Leigh's data set in various ways. Most importantly, we created our own dataset by running an extensive and unique experiment in which we presented 501 respondents with only the facial appearance of the incumbent and the main challenger for 196 national elections in 44 countries. Furthermore, given that this sample includes countries with different electoral systems, we explicitly explore this heterogeneity by adding the electoral system for

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[2] Although the idea of combining models has been suggested before (Armstrong 2001; Graefe et al. 2014).

all elections. Finally, following Leigh (2009), since both luck and looks refer to the fact that voters are not well-informed, we also test if their impact varies when we allow countries to differ in their level of economic development (GDP), education, media penetration and quality of government.

The perspective of economics: the world economy and luck

Election models of national elections that give a prominent role to economic variables do so by focusing on national economic conditions and by including economic variables that can been seen as being affected by domestic policy choices. Research in the tradition of Fair (1978, 2009) or Kiewiet (1983) belongs to this literature. In that light, questions such as whether voters are perfectly informed about the state of the economy and the underlying policy choices or not, and whether politicians are indeed in full control of for instance GDP growth, inflation, or unemployment is not really our concern here. What matters is that in these models voters and politicians alike are right in assuming that the economic variables are at least partially determined by (domestic) policy choices and are in that sense a reflection of the competence of the government in charge. Economic variables that are outside the control of national politicians are therefore not included since well-informed voters should not attach any importance to these variables in their voting decisions.

In a world where voters are assumed to be imperfectly informed and to lack the cognitive skills to always discriminate between economic conditions that are within or beyond the control of national politicians, it becomes possible that voters attach importance to economic variables that are by definition given or exogenous for the national politicians. In this case getting (re-)elected also become a matter of luck or chance. This does not only hold for national elections but also for regional elections within a country when national economic conditions that are given to the local policy maker determine the outcome of regional elections (Ebeid and Rodden 2006; Wolfers 2007). In the context of national elections and the international economy, Leigh (2009) is the prime example where it is tested how important national economic conditions (proxied by national GDP growth) are when set against exogenous international economic conditions (proxied by the difference between national and world GDP growth) in deciding democratic elections. Leigh refers to the former as luck and to the latter as competence.

Since we will use the model and data set by Leigh (2009) as a benchmark for our own empirical analysis (see 'dataset and methods'), we will briefly summarize his approach and results here. His data set covers 268 democratic elections for 58 countries for the period 1978-1999. Using a

conditional logit model where the dependent variable is an indicator whether the party of the national leader gets re-elected, Leigh (2009, p.169) finds that both economic luck and competence, as defined above, matter significantly, but luck is *more* relevant. The size of the luck coefficient (marginal effects) is twice the size of the competence coefficient**.** The size of the luck coefficient is also large in the sense that "national leaders are re-elected on average 57% of the time. An extra 1 percentage point of world growth raises this probability to 64%" (Leigh 2009, p. 177) This main finding holds up against an array of alternative specifications and robustness checks. In particular, luck and competence continue to matter for the probability of getting (re-)elected even when one controls for the degree of economic integration of a country (this affects how of much of national growth is determined by world economic growth to begin with), for the level of economic development, for the quality of governance and for media penetration. Leigh's findings on the relevance of economic luck and competence have been confirmed by more recent data, in a similar study by Collier and Hoeffler (2013, see table 6).

Although the effects of the world economy appear to be strong, there are some interesting moderating effects. In particular, the relevance of competence (against luck) is larger in countries with a higher GDP or a higher level of education. With both GDP and education, the idea is that these variables are proxies on the national level for the extent to which voters are well-informed about the policies and competence of the candidates. The relationship between the probability of getting (re-)elected and economic luck should therefore be weaker in countries with a higher GDP or a higher level of education. The assumption is thus that voters who are better informed are better able to understand how much of economic growth in the pre-election period is due to the world economy and therefore given to national policy makers. The same moderating effect is proxied by the quality of government (institutions) and the degree of media penetration but here the evidence is less clear cut (Leigh 2009).

The findings by Leigh (2009) that economic luck matters for national election outcomes across the world, and that luck seems to be at least as relevant as competence are obviously important if one wants to learn to what extent the chances of getting (re-)elected are determined by developments that are merely given to, here, national politicians. The study by Leigh (2009) also has a number of

limitations, of which the fact that the model only allows for macro-economic variables is the most pointed one. Moreover, in the model of Leigh (2009) all elections are lumped together, which is potentially a serious drawback because it is well established that the relationship between economic factors and election outcomes depends on the type of electoral system.

The perspective of psychology: the role of non-verbal cues

Cognitive psychologists have convincingly demonstrated that people take decisions based on heuristics or rules in order to deal with an information load (Kahneman, Slovic, and Tversky 1982), like in situations when people have to make voting decisions. Voters use shortcuts, for example by relying on simple rules like religion or party affiliation (Bartels, 2000). But more recently, several authors argued and showed that voters' impressions of candidates also depend heavily on non-verbal cues in the appearance of those candidates. Examples of these cues are candidates' height (Saad 2003) and candidates' voice (Gregory and Gallagher 2002). Olivola and Todorov (2010) describe this nonverbal-cue based-strategy as "judging a candidate's personality traits from his or her facial appearances, and using this cue to inform one's political choices…" (2010, page 85). The process suggested is that voters draw inferences - traits like personality characteristics, or competence - from non-verbal cues of candidates, and these inferences consequently lead to voting decisions, i.e. 'the taller candidate is more dominant, and therefore the better leader' (Saad 2003).

An increasing body of empirical research has emerged that focuses specifically on the facial appearance of political candidates (e.g. Antonakis and Dalgas 2009; Ballew and Todorov 2007; Banducci et al. 2008; Berggren, Jordahl and Poutvaara 2010; Todorov et al. 2005). These studies show that faces signaling competence and dominance predict electoral success (for an overview, see Olivola and Todorov 2010). Moreover, there is convincing evidence that these results are universal: despite ethnic, cultural and racial differences in response groups, the same candidates are seen as better candidates and winners of elections, with correlations ranging from .70 to .87 (Lawson et al. 2010). These effects also appear to be learned at a very early stage, given that Antonakis and Dalgas (2009) found that even children aged 5 to 13 years were able to predict the winner in 71% of the cases. Ratings by children also strongly predicted ratings by adult s. And a recent study found that even 3- to 4-year-olds converged to the judgments of adults (Cogsdill, Todorov, Spelke and Banaji 2014).

Again, although the relationship between facial appearance and electoral success is strong and highly robust, some studies show that this link is moderated by contextual factors, namely characteristics of voters, characteristics of time, and characteristics of the electoral system. With

respect to the characteristics of voters, Lenz and Lawson (2011) found that a) for unknowledgeable voters, the effects of appearance are much stronger, that b) television increases the extent to which voters rely on appearances to choose a candidate, and that c) the combination of both generated the strongest effect. Little, Roberts, Jones and DeBruine (2012) showed in an experiment that a changing context from wartime to peacetime affects which face receives the most votes. Finally, the work of Lawson et al. (2010) points out that facial appearances matter more in systems where electoral rules encourage personal voting. There are, however, a number of drawbacks with most of these studies, the most important one is that they are typically done within the lab, ignoring the economic context of the real world and not taking into account different electoral systems. Moreover, these studies typically concern elections in one country, in one year, so they do not systematically compare elections over countries or over time.

The type of electoral system

The studies discussed so far do not discriminate between various political systems or more specifically between various electoral systems. This can be due to the mere fact that they deal with hypothetical elections in a lab setting or with a sample that only consists of one type of election in the same country. For example, Todorov and colleagues (2005) study elections of both the US Senate and House of Representatives, but they do not compare across both. Our sample, with many countries that differ markedly when it comes to the set of political institutions and the electoral system, allows easy comparison of such differences. This is important because it well established theoretically as well as empirically that these institutions and the electoral system impact on the relationship between election outcomes and the determinants of these outcomes. In political science Lijphart (1977, 1999) and Powell (2000, 2006, 2009) have shown that parliamentary majority and representative systems go along with a rather different economic performance, as measured by for instance national economic growth, with the latter outperforming the former. Similarly, from the modern political economy literature (Persson and Tabellini 2003, 2004) we also know that these two basic parliamentary systems differ systematically along the dimension of economic policy and performance.[3]

Knutsen (2011), in line with Lijphart's earlier findings (1977, 1999), for instance shows for a large sample of countries that having a representative electoral system correlates with higher economic growth. One reason for this difference in economic outcomes across electoral systems is that a majority system is thought to cater more to the need of special interest groups whereas representative systems rely more on consensus building and coalition governments which are thought to be favor long term economic growth. One might therefore conjecture that the relationship between electoral systems and for instance economic growth is relatively stronger in a representative system.

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[3] Whether causality runs from the parliamentary system to economic performance or (also) the other way around is not easy to determine, see Acemoglu (2005), but what matters for our purposes is that economic performance and the parliamentary system are interdependent.

To add to this, in the psychological literature, the type of political or electoral system has also been shown to matter to the degree that personal voting is encouraged more in a majority electoral system (Lawson et al., 2010). This leads us to suggest that non-verbal but highly personal cues of candidates are more relevant in a majority based electoral system. In a similar vein, we expect that non-verbal cues are more important in a presidential system, because in such a system the political party plays a less strong role and the elected candidate is the same person as the one who is eventually politically in charge. In our analysis we will therefore exploit the national differences in electoral systems using the dataset from Golder (2005) and Bormann and Golder (2013), see also

http://www.qog.pol.gu.se/data/datadownloads/qogstandarddata/

Hypotheses

To summarize, both economic and psychological variables are found to be strong predictors of electoral success. Economic luck, in terms of the world economy, and looks, in terms of the facial appearance of the candidate, significantly influence the probability of getting (re-)elected in (national) elections. Building on these findings, we expect that combining these variables into a more comprehensive model will lead to gains in accuracy (Armstrong 2001; Graefe et al. 2014) and allows us to simultaneously test for the relevance of luck and looks. In doing so, we take into account that the type of electoral system could matter for significance of luck or looks for the (re-)election chances. So we propose hypothesis 1a, 1b and 1c:

Hypothesis 1a: Both luck (proxied by the difference between national and world GDP growth) and looks (i.e. facial appearances of candidates) will positively relate to the probability of getting (re-) elected.

Hypothesis 1b: The type of electoral system matters for the impact of luck and competence on the probability of getting (re-) elected. In majority based systems luck is more important, whereas competence is more important in representative electoral systems.

Hypothesis 1c: The type of electoral system matters for the impact of looks on the probability of getting (re-) elected, in such a way that looks are more important in majority based electoral systems.

Next to hypothesis 1a-c, we investigate another common finding in the economic and psychological lines of research. That is, they both point toward the role of contextual moderators that may influence the relationship between either luck or looks and electoral success (Leigh 2009; Lenz and Lawson 2011). These moderating factors are a proxy for the fact how countries differ in terms of how well-informed their voters are assumed to be. The better-informed voters are, the less relevant luck and

looks are expected to be. In order to investigate whether these moderating factors will weaken the effect of luck and looks, we therefore incorporate in our analyses the moderating variables that Leigh (2009) took into account: education, national GDP, the level of media penetration and the quality of government (for data sources see Leigh 2009).[4] Higher levels of education, GDP and media penetration are assumed to make it less likely that luck or looks matter since voters are thought to be place a larger weight in their votes on actual policies, the same holds for countries with higher quality of government.

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[4] In the political budget cycle literature similar moderating variables are invoked to explain why countries differ in the extent to which (fiscal) policy varies over the election cycle (De Haan and Klomp, 2013).

Data and methods

Building the dataset based on Leigh (2009)

Our dataset includes all variables from Leigh (2009) covering national presidential and parliamentary elections during the period 1978-1999 (available at

http://andrewleigh.org/research.htm#PoliticalEconomy). Data on elections are taken from the World Bank's Database on Political Institutions. Information on the independent variables like national and world economic growth of GDP per capita, are mainly based on the World Bank's World Development Indicators, see Leigh (2009) for more details. For an election in year t, the national and world economic growth of GDP per capita since the last election in t-i is taken as input to construct the main independent variables. Leigh (2009) does not make a distinction in the type of elections or electoral system, and only the probability of the (main) incumbent party getting re-elected is taken into consideration (information on other parties or politicians is thus not used). The main incumbent party is the party that delivered the president or prime minister.

Leigh excluded several elections and countries. First, elections that were characterized by fraud. Second, national elections in the USA and Japan are omitted (the size of the US and Japanese economy is deemed too large for these countries not to influence world GDP growth significantly). Third, countries in which the incumbent is always or never re-elected were left out of the dataset. This led to a total of 268 national elections in 58 countries between 1978-1999 (Leigh, 2009).

In order to test our hypotheses, we had to check the data set from Leigh (2009) in a number of ways. First, we checked all of his (2009) elections with national data on election outcomes, to see if indeed these national data gave rise to the same election outcome that was described by Leigh (whether the incumbent party was re-elected). This lead to a number of changes in the outcomes (see supporting information, Appendix 1).

Second, we checked if in all cases these were indeed democratic elections. In order to test the effect of facial appearances, we need to cast both a real incumbent and a real opponent against each other. This check led to a number of exclusions. First, we had to exclude a number of countries and elections from our sample where one party systems or dictatorships were present, like in Togo, Sudan,

Benin, Zambia, and Hungary. Next to these elections, we also skipped the first democratic elections after these countries changed into a democratic system, because for these first democratic elections it is difficult to point out who the incumbent and challenger were in the period before the first democratic election. E.g. we left out Bulgaria (election 1992) and Hungary (election 1990) from our sample.

Similarly, we did not include elections when one or more parties boycotted the elections. E.g. the elections in Jamaica in 1983, or all elections in Bangladesh (were the elections of 1986, 1988 were boycotted by several parties). Also, we excluded elections were the circumstances were unacceptable to be considered as democratic, as was the case in Indonesia between 1977 and 1997. Finally, we also decided not to include those democratic countries where not all voters can directly vote for the national incumbent (or challenger) because of restrictions to the number of candidates in their voting districts like in Belgium. (For selection details on all elections, see supporting information, appendix 1).

Expanding the dataset: type of elections, and incumbents & challengers

For the testing of our hypotheses, the major extension of the dataset concerns the fact that we added names (and faces) to the prime ministers or presidents that were in charge on behalf of the incumbent party in the period leading up to the election. Following Leigh (2009), this politician is called the 'incumbent' in our analysis. To be able to test for the relevance of facial cues, we also added the name of the 'opponent' of the incumbent.

As a second addition, the relevance of luck and looks for election results could depend on the type of electoral system. Therefore we added the electoral system to each election. Based on the dataset by Borman and Golder (2013) on political institutions and electoral systems throughout the world, we classified every single election as falling into one of three of the following categories: a) *majority (parliamentary), b) representative parliamentary (including mixed elections)* and *c) presidential* (Borman and Golder 2013)[5].

Typically in a majority parliamentary system, like the UK, it is quite clear who the main opponent, that is to say the challenger, will be. In a representative parliamentary system, which is often characterized by coalition governments like The Netherlands, the opponent is a priori less clear. We therefore had to set a rule to determine the opponent in representative parliamentary systems. As a rule we take the leader of the second largest party (if the incumbent party is the largest party), or even of the largest party (if the incumbent party, the party of the prime minister, is not the largest party) in the period *preceding* the election to be the main challenger in the election. Note that in a representative parliamentary system, the second largest party does not necessarily have to be an opposition party, since it may concern a party that is part of a coalition government.

The third category of presidential elections contains some analytical and practical difficulties. To start with the latter, in the category 'presidential', Borman and Golder (2013) distinguish no less

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[5] Technically speaking, our classification of electoral systems refers to the type of national election. With a few exceptions (see Finland or France in appendix 1), the type of national election does not vary within countries in our sample.

than five electoral systems, namely: plurality, absolute majority, qualified majority, alternative vote, and electoral college. This implies that within the presidential category, we find both majority ánd representative electoral systems, which makes it a priori less clear cut how to interpret our results in the light of our hypotheses.

But more importantly, as opposed to parliamentary elections, with presidential elections it is typically less clear who the opponent is. Although we decided that the opponent is the politician who, and depending on the type of presidential system, was either in a two-party system the candidate of the other party, or the candidate of the party that got the second largest number of votes in the previous election, we have to note here that it is less likely that voters perceive those candidates as real opponents to the incumbent president. This implies that for the group of presidential elections in our sample, the estimation results are rather problematic. For the sake of completeness, we incorporate the estimation results of these type of elections in all our models.

From names to faces: construction, measurement and data-collection

For all politicians of each election – both incumbent and opponent - we collected photos so as to be able to construct a variable that could be used to assess the relevance of facial cues in predicting the election result. Photos were found on the Internet, were cropped and put into black-white. There was only one election for which we were not able to find photos of a candidate (see supporting information, Appendix 1). Then, a large sample of respondents rated these pictures.

FIGURE 1. EXAMPLE OF TWO PHOTO'S

In return for $0.50, 501 U.S. American Mturk users (316 male, 185 female, mean age 32.3 years) rated all pictures. Sample size (500) was determined a priori. One additional participant failed to collect the compensation, thus yielding one extra participant. The background of these respondents were: 76% White, 6% Hispanic, 6% Black, 9% Asian, 2% mixed, 1% missing or other. Their education was 13% Ma or higher, 32% Ba, 31% college, 20% secondary education, 4% primary education. Finally, their professional working status was 18% self-employed, 49% employed, 15% unemployed, 14% studying, 4% stay-at-home parent.

Participants completed the study online. They were shown 18 pairs of politicians and were asked to indicate for each pair, for which of the two they would vote, based only on looks (see figure 1). We chose to show only 18 pairs of politicians to each participant (rather than all 180 pairs) to ensure that participants stayed fit. We also counterbalanced the positions of the faces, so that for each

set of pairs each candidate was shown an equal number of times on the left as on the right.[6] To avoid

that participants rated the same candidates twice (in the same set or in a different set), participants did

not receive a fully randomized selection of pairs, but instead a selection that was restrained. For

example, participants who were shown the pair belonging to the 1983 Great Britain elections

(featuring Margaret Thatcher and Michael Foot) were not shown the pair belonging to the 1987 Great

Britain elections (featuring Margaret Thatcher and Neill Kinnock). Pairs of candidates were judged by

50 participants on average. No pair was judged by less than 45 candidates.

Based on 1) the corrections of the Leigh (2009) data set, 2) the exclusion of several elections

because of e.g. fraud or single-party systems, 3) the availability of suitable photos, and 4) the

exclusion of some confounded pairs, 5) deleted countries because of all positive or all negative

outcomes (cf Leigh, 2009), we end up with 196 elections for 44 countries in the period 1978-1999. Of

these 196 elections, in total 58, 91 and 47 are classified as respectively Majority, Representative and

Presidential[7].

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[6] There was no effect of presentation position (left vs. right) on candidates' success, $t(499) = 1.15$, $p = .25$.

Estimation results

For the estimations based on our sample of 196 elections, we use a conditional logit model with country fixed effects where the dependent variable is an binary indicator whether or not the incumbent gets re-elected.[8] Since we build our analysis on Leigh (2009), we first estimated our logit model with national GDP growth and, alternatively, world GDP growth (luck) and the difference between national and world GDP growth (competence) as regressors. Notwithstanding the fact that we have a smaller sample of national elections as compared to Leigh (2009), 196 vs 268 elections, our estimation results (not shown here) are rather similar. National growth has a significant positive impact on the probability of getting re-elected and when we split national growth into the economic luck and competence terms, we do also find that both terms have a positive sign and are clearly significant (at the 5% level). In addition, and again in line with Leigh (2009), we find that the size of the luck coefficient is more than twice as large as the competence coefficient (respectively 0.36 for luck and 0.17 for competence). Our replication of the basic model by Leigh (2009) thus seems to yield initial confirmation of the economic (or luck) part of hypothesis 1a, but the real test is whether this also holds after we included our extensions as discussed earlier.

Apart from the sample composition, our main differences with Leigh (2009) thus concern the inclusion of the psychological variable (via the verdict on the facial appearance of the incumbent and challenger) and the type of electoral system. For each model specification and independent variable, Tables 1 and 2(panel A) report the estimated coefficient, the standard error associated with that coefficient, as well as the marginal effect on the probability to get re-elected (without the standard error). As to the latter, we report the average marginal effect assuming that the fixed effects are equal

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[8] As usual, consistent estimation of the fixed effect logit model is done on a subsample which excludes countries where the incumbent either always or never wins (Wooldridge, 2010). Consistent estimation of the fixed effect linear probability model should however be done on the full sample. Leigh (2009) uses for his estimations with the fixed effect linear probability model only the subsample with the afore mentioned condition. Consequently, his estimations with the fixed effect linear probability model are inconsistent because of endogenous sample selection.

to zero. In the *Appendices to Tables 1 and 2* we present the full FE logit estimations for all of our

specifications discussed in the main text below.

Table 1: Marginal effect of Looks, Luck and Competence on the log-odds ratio and on the probability to get re-elected by type of election from a fixed effects logit models.

Variable	type_election	spec_1	spec_2	spec_3	spec_4
Looks	Majority	-0.0300 (0.335) -0.00751	1.656** (0.811) 0.318***		1.760** (0.854) 0.197**
	representative	-0.0300 (0.335) -0.00549	-0.468 (0.486) -0.0966		-0.223 (0.508) -0.0432
	Presidential	-0.0300 (0.335) -0.00524	-0.961 (0.708) -0.190		-1.077 (0.732) -0.251*
Competence	Majority			0.141 (0.132) 0.0262	0.125 (0.131) 0.0139
	representative			0.428*** (0.161) 0.0766*	0.446*** (0.164) 0.0865**
	Presidential			0.0282 (0.141) 0.00668	0.00274 (0.151) 0.000638
Luck	Majority			0.551 (0.436) 0.102**	0.722 (0.498) 0.0807***
	representative			0.462* (0.267) 0.0827	0.408 (0.271) 0.0790
	Presidential			0.00253 (0.256) 0.000601	0.0200 (0.250) 0.00466
lnL		-80.2516	-76.1709	-73.0964	-69.1067
Pseudo R2		0.0055	0.0561	0.0942	0.1436

Note: Each cell reports the following three statistics: 1) the marginal effect on the log-odds ratio to get re-elected; 2) its standard error (in parentheses); 3) the average marginal effect on the probability to get re-elected (assuming that the fixed effect is zero). Standard errors in parentheses. ***, **, * denote statistical significance at the1%, 5% and 10% level. Number of observations=196, Number of countries: 44. All specifications include dummies indicating the type of election. The parameter estimates of the underlying fixed effects logit models are presented in Supporting information (appendix Table 1).

To include our extensions of Leigh (2009), we first ran the logit model for our 3 types of elections (parliamentary majority, parliamentary representative and mixed, and presidential) without the inclusion of our economic variables yet. Column (1) of Table 1 shows the estimation results where the variable *looks* is a dummy variable that equals zero (one) if for any pair of faces and thus for any given election, the share of the respondents that voted for re-election of the incumbent was smaller (equal or larger) than 0.5. Column (1) shows that if we do *not* discriminate across the 3 types of elections, the looks variable is not significant and the same holds true for the 3 election dummies as such. Next, see column (2), we interact the looks variable with the type of election and now we find that the impact of the looks variable, that is to say of our respondents' vote verdict per election based on the facial appearance of the pair of candidates unknown to them, varies by type of election. As expected in hypothesis 1c, we find that for parliamentary majority elections the looks variable has a clear significant positive impact and this is not the case for the other two types of elections. The interaction terms for the type of election and the looks variable are jointly significant at the 5% level. This is the first evidence that looks might matter and in particular for those elections (in casu Majority elections) where the link between candidates and those politicians actually in charge of the national government is relatively more direct. Although these results do suggest that depending on the type of electoral system 'looks' can matter, this is not conclusive evidence if only because we also have to include the economic variables, which is what we do next.

Before confronting (economic) luck/competence with (psychological) looks while also taking the type of elections into account, we re-ran the basic specifications of Leigh (2009) as discussed above, by checking whether the impact of the economic variables is also election-specific, which seems in line with hypothesis 1b. The most striking result in Column (3) is that when we add the type of electoral system, the significance of luck dramatically drops when compared to the findings of Leigh (2009). Moreover, we clearly find that the two economic growth variable luck and competence are typically only significant for the Representative elections, as Column (3) shows.

Before we simultaneously estimated the relevance of *luck vs looks* for the re-election chances of the incumbent, we first controlled for the fact that world economic growth affects countries

differently in terms of its impact on national growth: for a small, open economy like Belgium world economic growth matters more for national growth than for a larger and relatively more closed economy like Germany. Following the procedure adopted by Leigh (2009, equations (3) and (4), p. 170), we used these adjusted economic luck and competence terms where the adjustment concerns the sensitivity of national GDP growth to world GDP growth.

In column (4), we add the adjusted economic luck and competence terms to the model specification underlying column (2). The basic result that the looks variable when interacted with the type of elections (see hypothesis 1b) is significant for Majority elections but not for the other two types of elections, continues to hold after we added the economic variables. But interestingly enough, looking at the interaction of the two economic variables luck and competence with the type of elections, we find that economic luck is no longer significant in a joint model specification, but (psychological) looks are significant at least for Majority elections. It seems that looks trump luck in their relevance in predicting national elections! The economic competence variable does however matter in particular for Representative elections, and this is also in line with our assumption that with elections that favour consensus building and coalition governments, economic competence might matter more.

Taking the type of elections into account, the overall impact of the economic variables is weaker than that of the (psychological) looks variable. The interaction of the looks variable with the type of elections, recall column (2), was jointly significant but the additional interaction terms, that is the interaction of economic luck and competence with the type of elections, are not jointly significant. Column (4) represents our basic model to which we will add additional moderating and robustness checks below.

Table 1 leads to the following conclusions. Hypothesis 1a is partially confirmed. When taken in isolation, both luck and looks have a positive significant impact on the probability of getting re-elected, but in our joint specifications looks continue to matter but luck does not. We do find confirmation for hypothesis 1b, since the type of electoral system matters for the relevance of what we call luck and competence. Luck matters indeed to some degree in a majority system, whereas

competence is clearly significant in a representative system. Finally, we find strong confirmation for hypothesis 1c, since looks only matter in majority based systems.

As a robustness check of our results, we added moderating variables in our analyses based on Leigh (2009): education, national GDP, media and quality of government. The basic idea is simple, a higher level on each of these 4 moderating variables is thought to signal that voters in this country are relatively more informed and would put ceteris paribus less weight on our luck and looks variables. We thus interacted both luck, competence and looks with each of these moderating variables. We added these terms to the model in Column (4) of Table 1. In Table 2, we present these results.

Table 2. Sensitivity analysis: additional interaction variables

Panel A: *Marginal effect of Looks, Luck and Competence on the log-odds ratio and on the probability to get re-elected by type of election*

Variable	type_election	col_4	Gdp	educ	media	q of gov
Luck	Majority	0.722 (0.498) 0.0807***	0.966* (0.531) 0.0911***	1.259* (0.643) 0.0915***	1.155** (0.577) 0.104***	1.307** (0.594) 0.0940***
	Representative	0.408 (0.271) 0.0790	0.495* (0.281) 0.0899	0.456 (0.288) 0.0836	0.541* (0.293) 0.0992*	0.381 (0.295) 0.0715
	Presidential	0.0200 (0.250) 0.00466	0.0997 (0.265) 0.0221	0.149 (0.273) 0.0225	0.202 (0.312) 0.0437	0.105 (0.278) 0.0270
Competence	Majority	0.125 (0.131) 0.0139	0.196 (0.141) 0.0183	0.178 (0.184) 0.00986	0.156 (0.156) 0.0153	0.293 (0.185) 0.0214
	Representative	0.446*** (0.164) 0.0865**	0.522*** (0.171) 0.0951**	0.547*** (0.187) 0.106***	0.575*** (0.186) 0.106***	0.538*** (0.174) 0.100**
	Presidential	0.00274 (0.151) 0.000638	0.0437 (0.156) 0.00883	0.0147 (0.163) 0.00642	0.115 (0.163) 0.0223	0.108 (0.169) 0.0222
Looks	Majority	1.760** (0.854) 0.197**	2.107** (0.954) 0.199***	2.383** (1.096) 0.158**	1.968** (0.928) 0.175***	2.489** (1.127) 0.195***
	Representative	-0.223 (0.508) -0.0432	-0.245 (0.513) -0.0452	-0.238 (0.510) -0.0464	-0.197 (0.523) -0.0370	-0.200 (0.512) -0.0354
	Presidential	-1.077 (0.732) -0.251*	-1.362* (0.780) -0.301**	-1.456* (0.817) -0.246	-1.200 (0.780) -0.259*	-1.214 (0.793) -0.240

Note: Each cell reports the following three statistics: 1) the marginal effect on the log-odds ratio to get re-elected; 2) its standard error (in parentheses); 3) the average marginal effect on the probability to get re-elected (assuming that the fixed effect is zero). Standard errors in parentheses. ***, **, * denote statistical significance at the 1%, 5% and 10% level. Number of observations=196, Number of countries: 44. All specifications include dummies indicating the type of election. The parameter estimates of the underlying fixed effects logit models are presented in appendix to Table 2. For media we used the combined measure Media3 of Leigh (2009), which includes papers, radios and tvs. For Quality of Governance we used the polity2-variable of Leigh (2009).

Table 2. Continued

Panel B: *The effect of development (GDP, education, media, quality of government) on the return to looks, luck and competence*

VARIABLES	(1) col. 4 table X	(2) c.gdp	(3) educ	(4) media	(5) q of gov
c.luck#c.gdp		0.0227	-0.345	0.309	-0.279
		(0.242)	(0.398)	(0.539)	(0.351)
c.competence#c.gdp		0.302**	0.546***	0.669**	0.215
		(0.136)	(0.209)	(0.265)	(0.150)
c.looks#c.gdp		-0.612	0.0922	-0.677	-0.921
		(0.623)	(0.994)	(1.221)	(0.845)
c.luck#c.xx			0.492	-0.125	0.701
			(0.393)	(0.177)	(0.501)
c.competence#c.xx			-0.342*	-0.152*	0.143
			(0.201)	(0.0862)	(0.148)
c.looks#c.xx			-0.780	0.0761	0.141
			(0.740)	(0.302)	(1.138)
Observations	196	196	196	196	196
Number of ctyno	44	44	44	44	44
lnL	-69.1067	-65.7108	-62.8656	-63.8220	-64.2219
R2	0.1436	0.1857	0.2209	0.2091	0.2041
H0: interactions gdp=0, chi2		6.6039	6.9984	7.6078	3.0716
H0: interactions gdp=0, p		0.0857	0.0719	0.0549	0.3807
H0: interactions=0, chi2			4.6291	3.3395	2.7923
H0: interactions=0, p			0.2011	0.3422	0.4248

Note: Standard errors in parentheses; *** p<0.01, ** p<0.05, * p<0.1.
In each column, xx refers to the additional interaction-variable, so respectively education, media and quality of government.

Most importantly (see Panel A), the strong direct effect of looks is not weakened by any of these variables. Apparently, looks matter regardless of the level of economic development, the educational level of the voters, information provided by media, or quality of government. These variables are thus all proxies for well-informedness of voters (Lenz and Lawson 2011). This signals that the importance of looks across electoral systems does not really change after taking these moderating factors into account.

As is shown in Table 2 Panel A, the main conclusions with respect to competence and luck also continue to hold after the inclusion of the four moderating variables. In line with Table 1 (see replication of column 4 in Table 2 Panel A), the effect of competence remains highly significant in representative systems after adding the interaction-variables. Moreover, and in line with hypothesis 1b, in the specification of the interaction models, there is some evidence that the effect of luck is now significant in majority systems, when adding the interaction-variables.

Finally, in line with the findings of Leigh (2009), Panel B shows that only GDP has a significant interaction, and this effect works mainly through the interaction with competence. This indicates that a higher level of economic development increases the effect of competence. Moreover, in comparison with the findings of Leigh (2009) and Collier and Hoeffler (2013) who only look at the effects of luck and competence, the Pseudo R^2 in our models (see Table 2 Panel B) shows that adding looks adds to the explained variance significantly. In our models we find results ranging from .14 to .22, whereas Leigh (2009) and Collier and Hoeffler (2013) range between .05 and .09.

Conclusion

Based on a combined dataset of 196 national parliamentary and national elections in 44 countries for the period 1979-1999, our results show that depending upon the type of electoral system, the looks of a candidate and economic competence – and, to a far lesser degree, economic luck - are relevant predictors of electoral success. We demonstrate that looks are only significant in majority based elections, whereas the economic competence variable matters in representative elections, thereby confirming our hypotheses 1a-1c. We also find that when both (economic) luck and (psychological) looks are simultaneously taken into account, looks remain important for a sub-set of elections whereas luck ceases to be relevant. Adding moderators indicating the well-informedness of voters like GDP or education does not change these outcomes for the predictive effect t of faces, which implies that the effect of looks on majority elections is robust. For the economic variable competence, we do find that there is a significant interaction with GDP, indicating that in representative systems the relevance of competence is higher in countries with a higher GDP.

This paper is among the first to combine and confront research streams from economics and psychology on predicting elections. Combining these approaches seems to indicate that psychology "wins", since we show that in joint model specifications where both variables are included looks seem to matter, whereas luck does not. This is not to say that economic factors are irrelevant, as the significance of economic competence for elections in representative systems indicates. In addition, since we deliberately only look at determinants of elections that are a given for a politician and we thus exclude actual (economic) policies by politicians as determinants the re-election probability, we certainly do not want to claim that economic policies do not matter for election outcomes.

The most important finding of our study is that the role of exogenous economic and psychological variables in predicting elections should be supplemented by taking the *electoral system* into account. Our main result is that only then can we understand the precise role of both economic luck/competence and psychological looks in predicting the chance to get re-elected. We consistently show that looks matter in a majority system where the winner takes all, whereas economic competence of a candidate only influences the outcome in representative systems. Our findings suggest that the

relationship between voter and candidate is more direct and personalized, to the effect that looks (and luck) are more relevant in majority systems. However, the underlying process of this relationship is subject for further research. We propose that ignoring the most dominant distinguishing characteristic of any electoral system (majority versus representative based), leads to inconclusive and uncertain results in the field of both psychological and economic research on predicting electoral success.

Our findings have analytical implications as well. In economics, research on predicting elections which incorporates all three aspects of the triangle 'economics, psychology and electoral systems' does not exist yet. At best, two out of three are to some degree combined like economics and electoral systems or political institutions (following Persson and Tabellini 2003, 2004) or, so far as rare exceptions, economics and psychology (Benjamin and Shapiro 2009, Bergren et al. 2010). Economists should therefore not only incorporate the political context into their election models, but also combine this with insights from the psychology literature on the role of facial or other (non-verbal) cues.

For the field of psychology, in studying the role of faces and other non-verbal cues in predicting election outcomes or other performances (Antonakis and Dalgas 2009; Berggren et al. 2010), our results indicate the limitation of their findings. Clearly, our results reconfirm the robust and consistent effect of the looks of politicians on election outcomes. But a major drawback of the previous studies is that they were done in the restricted context of experimental designs. Based on our findings, we propose that adding the context to these kind of questions is imperative. We agree with Rule and Tskhay (2014) who argue that the context in which leadership occurs has been explored too scarcely. We see this as a promising area for research into the topic of facial appearance and the predictions of leadership success.

Although unique in its combination of different perspectives, our study has also limitations. First, due to the small numbers of female incumbents and opponents, we had to limit our analyses to male politicians. Therefore, we could not relate our findings to the fact that male and female politicians seem to be judged differently (Chiao, Bowman and Gill 2008). Second, we decided to present the pictures of politicians to a group of US citizens only, since a full cross-cultural design for our study

would have needed respondents from 44 different countries, leading to a very complex and too time-consuming study. It could be argued that the prediction of a respondent depends upon his/her cultural background, although results on this topic are mixed (Antonakis and Dalgas 2009; Poutvaara, Jordahl, and Berggren 2009; Rule et al. 2010). Future research could expand our findings by investigating other cultures as well. Third, due to the small sample of presidential elections and the associated grouping of five types of presidential elections (Borman and Golder 2013), we could not solidly test the role of looks in presidential elections. This requires research in a larger sample. At the same time when compared to parliamentary elections, the set-up of an incumbent and the main challenger is typically less well-defined with presidential elections.

To conclude, the finding that facial cues in itself can determine election outcomes stands up to those who believe in rational voters and the importance of politicians' actions (instead of their mere looks) for electoral success. It is tempting to conclude that voters apparently cast their vote without any knowledge of actual politics or policies. It is clear, however, that this is not the conclusion that one should draw.Our results suggest that the governance of elections, in casu the electoral system, influences the choice set upon which voters base their behavior as shown by the above mentioned findings for majority and representative systems. The context in which voters cast their ballot in our sample of national elections is instrumental in shaping the relevance of luck & looks in deciding these elections.

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Supporting information

Appendix to Table 1: complete FE logit results

VARIABLES	(1)	(2)	(3)	(4)
Competence			0.141	0.125
			(0.132)	(0.131)
Luck			0.551	0.722
			(0.436)	(0.498)
Representative elections dummy	-1.136	-0.680	-1.993	-1.531
	(1.333)	(1.352)	(1.419)	(1.493)
Presidential elections dummy	-1.225	-0.538	-0.457	0.315
	(1.406)	(1.422)	(1.441)	(1.492)
Representative elections dummy #c.competence			0.287	0.321
			(0.208)	(0.210)
Presidential elections dummy #c.competence			-0.113	-0.122
			(0.193)	(0.200)
Representative elections dummy #c.luck			-0.0897	-0.314
			(0.510)	(0.565)
Presidential elections dummy #c luck			-0.549	-0.702
			(0.506)	(0.559)
Looks	-0.0300	1.656**		1.760**
	(0.335)	(0.811)		(0.854)
Representative elections dummy #c.looks		-2.125**		-1.983**
		(0.946)		(0.994)
Presidential elections dummy#c.looks		-2.617**		-2.837**
		(1.075)		(1.124)
Observations	196	196	196	196
Number of ctyno	44	44	44	44
lnL	-80.2516	-76.1709	-73.0964	-69.1067
R2	0.0055	0.0561	0.0942	0.1436
H0: d2_luck=0, chi2			2.4896	2.4896
H0: d2_luck=0, p			0.2880	0.2880
H0: d2_competence=0, chi2			3.3398	3.3398
H0: d2_competence0, p			0.1883	0.1883

Standard errors in parentheses; *** p<0.01, ** p<0.05, * p<0.1

Appendix to Table 2(Panel A and B): complete FE logit results

VARIABLES	(1)	(2) c.gdp	(3) c.educ	(4) c.media	(5) c.QofGov
Luck	0.722	0.964*	1.124*	1.207**	1.118**
	(0.498)	(0.533)	(0.652)	(0.591)	(0.551)
Competence	0.125	0.172	0.248	0.197	0.234
	(0.131)	(0.137)	(0.196)	(0.153)	(0.161)
luck#c.gdp		0.0227	-0.345	0.309	-0.279
		(0.242)	(0.398)	(0.539)	(0.351)
luck#c.xx			0.492	-0.125	0.701
			(0.393)	(0.177)	(0.501)
competence#c.xx			-0.342*	-0.152*	0.143
			(0.201)	(0.0862)	(0.148)
competence#c.gdp		0.302**	0.546***	0.669**	0.215
		(0.136)	(0.209)	(0.265)	(0.150)
Looks	1.760**	2.155**	2.633**	1.975**	2.518**
	(0.854)	(0.963)	(1.152)	(0.945)	(1.240)
looks#c.xx			-0.780	0.0761	0.141
			(0.740)	(0.302)	(1.138)
looks#c.gdp		-0.612	0.0922	-0.677	-0.921
		(0.623)	(0.994)	(1.221)	(0.845)
Representative dummy	-1.531	-1.818	-0.336	-1.453	-1.581
	(1.493)	(1.545)	(1.708)	(1.564)	(1.583)
Presidential dummy	0.315	0.382	1.624	0.361	-0.221
	(1.492)	(1.557)	(1.809)	(1.585)	(1.701)
Representative dummy#c.looks	-1.983**	-1.983*	-2.531**	-1.821	-2.174*
	(0.994)	(1.096)	(1.227)	(1.152)	(1.193)
Presidential dummy #c.looks	-2.837**	-3.726***	-4.402***	-3.318***	-4.036***
	(1.124)	(1.287)	(1.556)	(1.284)	(1.487)
Representative dummy #c.luck	-0.314	-0.485	-0.687	-0.695	-0.964
	(0.565)	(0.594)	(0.717)	(0.663)	(0.693)
Presidential dummy #c.luck	-0.702	-0.857	-0.876	-1.043	-1.057*
	(0.559)	(0.601)	(0.739)	(0.640)	(0.626)
Representative dummy #c.competence	0.321	0.144	0.103	0.144	0.0731
	(0.210)	(0.236)	(0.277)	(0.258)	(0.263)
Presidential dummy #c.competence	-0.122	-0.0255	-0.199	-0.0276	-0.0421
	(0.200)	(0.206)	(0.273)	(0.212)	(0.221)
Observations	196	196	196	196	196
Number of countries	44	44	44	44	44
lnL	-69.1067	-65.7108	-62.8656	-63.8220	-64.2219
R2	0.1436	0.1857	0.2209	0.2091	0.2041
H0: d2_luck=0, chi2	2.4896	2.4896	2.4896	2.4896	2.4896
H0: d2_luck=0, p	0.2880	0.2880	0.2880	0.2880	0.2880
H0: d2_competence=0, chi2	3.3398	3.3398	3.3398	3.3398	3.3398
H0: d2_competence=0, p	0.1883	0.1883	0.1883	0.1883	0.1883

Standard errors in parentheses; *** p<0.01, ** p<0.05, * p<0.1

Supporting information

Appendix 1. Country, election, and decision

Categories Decision
1 = included, following Leigh (2009)
2 = included, but different election outcome (who won)
3 = included, but different year of election because of inconsistency in Leigh's decision (confusion of parliamentary and presidential elections)
4 = exclusion, no democratic election (one-party state)
5 = exclusion, first election in democracy or after boycott/fraud
6 = exclusion, because of boycott or fraud
7 = exclusion because of electoral system (not all voters can directly vote for national candidates)
8 = exclusion, because of missing material
9 = exclusion, because of confounds
10 = exclusion, because of combination of types of elections in Leigh (e.g. mix of parliamentary and presidential, or state elections)
11 = exclusion, no elections in that year
Categories Electoral system
a) majority (parliamentary)
b) representative (parliamentary, including mixed)
c) presidential

Country	Election	Decision	Electoral system
Argentina			
	1989	1	c
	1991	1	b
	1993	1	b
	1995	1	c
	1997	2	b
	1999	1	c
Armenia			
	1996	1	c
	1998	1	c
	1999	1	c
Australia			
	1980	1	a

	1983	1	a
	1984	1	a
	1987	1	a
	1990	1	a
	1993	1	a
	1996	1	a
	1998	1	a
Bahamas			
	1982	1	a
	1987	1	a
	1992	1	a
	1997	1	a
Bangladesh			
	1986	6	
	1988	6	
	1991	5	
	1996	5 (after 6 in same year)	
Barbados			
	1981	1	a
	1986	1	a
	1991	1	a
	1994	1	a
	1999	1	a
Belgium			
	1981	7	
	1985	7	
	1987	7	
	1991	7	
	1995	7	
	1999	7	
Benin			
	1989	4	
	1991	4	
	1995	4	
Brazil			
	1985	8	
	1986	8	
	1989	1	c
	1990	8	
	1994	1	c
	1998	1	c
Bulgaria			
	1992	5	
	1996	2	c
Canada			
	1980	1	a

	1984	1	a
	1988	1	a
	1993	1	a
	1997	1	a
Colombia			
	1982	1	c
	1986	1	c
	1990	1	c
	1994	1	c
Congo			
	1989	4	
	1992	5	
	1993	1	a
Costa Rica			
	1982	1	c
	1986	1	c
	1990	1	c
	1994	1	c
	1998	1	c
Cyprus			
	1983	1	c
	1988	3	c
	1993	1	c
	1998	1	c
Czech Rep.			
	1996	2	b
	1998	2	b
Dom. Rep.			
	1982	1	c
	1986	1	c
	1990	1	c
	1994	1	c
	1998	2	b
Ecuador			
	1986	10	
	1988	1	c
	1990	10	
	1992	1	c
	1994	10	
	1996	2	c
	1998	2	c
El Salvador			
	1989	1	c
	1991	10	
	1994	1	c
	1997	10	

	1999	1	c
FRG/Germany			
	1980	1	b
	1983	2	b
	1987	1	b
	1990	1	b
	1994	1	b
	1998	1	b
Finland			
	1982	1	c
	1983	1	b
	1987	1	b
	1988	1	c
	1991	2	b
	1994	1	c
	1995	2	b
	1999	1	b
France			
	1981	1	c
	1986	1	b
	1988	1	c
	1993	1	b
	1995	10	
	1997	1	b
Greece			
	1981	1	b
	1985	1	b
	(June) 1989	2	b
	1993	1	b
	1995	10	
Grenada			
	1995	1	a
	1999	1	a
Guatemala			
	1995	2	c
	1999	2	c
Honduras			
	1985	1	c
	1989	1	c
	1993	1	c
	1997	1	c
Hungary			
	1980	4	
	1985	4	
	1990	5	
	1994	1	b

	1998	1	b
Iceland			
	1979	1	b
	1983	1	b
	1987	1	b
	1991	1	b
	1995	1	b
	1999	1	b
India			
	1984	1	a
	1989	1	a
	1991	1	a
	1996	1	a
	1998	1	a
Indonesia			
	1982	6	
	1987	6	
	1992	6	
	1997	6	
	1999	5	
Ireland			
	1981	1	b
	nov-1982	2	b
	1987	1	b
	1989	1	b
	1992	1	b
	1997	1	c
Israel			
	1981	1	b
	1984	1	b
	1988	1	b
	1992	1	b
	1996	1	b
	1999	2	b
Italy			
	1979	1	b
	1983	1	b
	1987	1	b
	1992	1	b
	1994	2	b
	1996	1	b
Jamaica			
	1980	1	a
	1983	6	
	1997	1	a
Madagascar			

	1993	8	
	1996	8	
	1998	10	
Malta			
	1981	1	b
	1992	1	b
	1996	1	b
	1998	1	b
Mauritius			
	1987	8	
	1991	1	a
	1995	1	a
Mongolia			
	1986	4	
	1990	5	
	1992	1	a
	1993	1	c
	1996	2	a
	1997	2	c
Nepal			
	1991	5	
	1994	1	a
	1999	2	a
Netherlands			
	1981	1	b
	1982	1	b
	1986	1	b
	1989	1	b
	1991	11	
	1994	1	b
	1998	1	b
New Zealand			
	1978	1	a
	1981	1	a
	1984	1	a
	1987	1	a
	1990	1	a
	1993	1	a
	1996	1	b
	1999	1	b
Norway			
	1981	1	b
	1985	2	b
	1989	2	b
	1993	1	b
	1997	1	b

P.N. Guinea			
	1982	1	a
	1987	1	a
	1992	2	a
	1997	1	a
Pakistan			
	1990	1	a
	1993	1	a
	1997	1	a
Portugal			
	1983	1	b
	1985	1	b
	1987	1	b
	1991	1	b
	1995	1	b
	1999	1	b
S. Africa			
	1981	1	b
	1984	10	
	1987	1	b
	1989	1	b
	1994	1	b
	1999	1	b
Spanje			
	1982	1	b
	1986	1	b
	1989	1	b
	1993	1	b
	1996	1	b
St Lucia			
	1987	1	a
	1992	1	a
	1997	1	a
Sudan			
	1978	4	
	1980	4	
	1981	4	
	1983	4	
	1986	5	
Zweden			
	1979	2	b
	1982	1	b
	1985	1	b
	1988	1	b
	1991	1	b
	1994	2	b

	1998	1	b
Togo			
	1986	4	
	1994	5	
	1998	6	
	1999	6	
Trinidad-Tobego			
	1981	1	a
	1986	1	a
	1991	1	a
	1995	1	a
UK			
	1983	1	a
	1987	1	a
	1992	1	a
	1997	1	a
Uruguay			
	1994	1	c
	1999	1	c
Vanuatu			
	1987	1	a
	1998	1	a
Venezuela			
	1983	1	c
	1988	1	c
	1993	1	c
	1998	1	c
W Samoa			
	1982	1	b
	1985	1	b
	1988	2	b
	1991	1	b
	1996	1	b
Zambia			
	1983	4	
	1988	4	
	1991	5	