Chapter 5: My Rules of Forecasting

> People don't realize that we cannot forecast the future. What we can do is have probabilities of what causes what, but that's as far as we go.
>
> —*Alan Greenspan*

The Problem with Forecasting Geopolitical Events

Forecasting in the social sciences is much more difficult than it is in the natural sciences. This is not only because the social sciences lack the ability to test theories under laboratory conditions, where all the variables can be controlled, but also because the social sciences deal with people. And people have the nasty habit of changing their minds and acting irrationally from time to time. Even in economics and finance, areas where data are plentiful and forecasting methods have been honed for decades, a survey of the empirical track record of forecasts clearly shows one thing: Economists and investors are horrible at forecasting (Klement 2020).

In the next few chapters, I will focus on the potential future developments of geopolitical events that are currently unfolding. As one might imagine, because political scientists have much less structured data available to them than economists and investors have, their forecasting efforts are much more rudimentary—and often less reliable. As Bressan, Nygård, and Seefeldt (2019) explained, the earliest efforts to forecast geopolitical events, such as wars and the breakdowns of governments, were made shortly after World War II, but the lack of quality data and computing power meant that these efforts were rare and doomed to fail.

In the 1980s, game theoretic models of conflict and geopolitical events were increasingly used to predict real-life outcomes. Thanks to increasingly powerful computers, these approaches could for the first time be tested using real-life data. During this time, some researchers also made the first steps in using artificial intelligence (AI) and machine learning methodologies to analyze news and predict the onset of conflicts (Schrodt 1988). The lessons learned from those days often seem to be forgotten today. Schrodt (2014) listed a series of malpractices he found in modern-day AI-based research of political events, many of which can easily be applied as a criticism of AI-based research in finance and economics.

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We Are Getting Better

Nevertheless, significant progress has been made in our ability to forecast the onset of geopolitical conflicts. Especially over shorter time frames of up to two years, early warning systems, such as the one developed by the US government–sponsored Political Instability Task Force, have now achieved relatively good accuracy. Goldstone, Bates, Epstein, Gurr, Lustik, Marshall, Ulfelder, and Woodward (2010) reported both a "Type I error" (falsely predicting a conflict where none exists) and a "Type II error" (falsely predicting no conflict where one exists) frequency of 20% for these models.

Even long-term forecasts are becoming reasonably accurate. Hegre, Karlsen, Nygård, Strand, and Urdal (2013) used data from 1970 to 2009 to predict the likelihood of the onset of armed conflict (either civil war or international wars) in the years 2010–2050. A first model used in a previous study based on data up to the year 2000 was reasonably effective in predicting the onset of conflict in the years 2007–2009. In their 2013 paper, they published a list of the countries most likely to experience some form of armed conflict in 2017, 2030, and 2050. We can now check the accuracy of their country-level forecasts for 2017. **Exhibit 1** shows the five countries with an ongoing conflict in 2009 that had the highest likelihood of a conflict in 2017. It also shows the five countries that had no conflict in 2009 but the highest likelihood of a conflict in 2017. Four of the five countries that were in conflict in 2009 were still in conflict in 2017. Given that these five countries' average likelihood of being in conflict in 2017 was 78%, the model of Hegre et al. (2013) did a good job of predicting the continuation of existing conflicts. Also, with respect to predicting the onset of new conflicts, the model did very well because the

Exhibit 1. Predicted and Realized Armed Conflicts in 2017
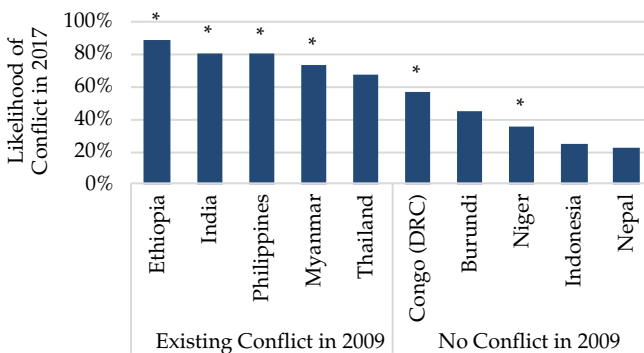
Note: Asterisks denote the countries with an active conflict in 2017.
Sources: Hegre et al. (2013); Uppsala Conflict Data Program Armed Conflict Dataset.

average likelihood of a conflict in 2017 for the five countries with no conflict in 2009 was 37%. Today, two of these five countries indeed have an internal conflict with rebels of the Islamic State.

However, Hegre et al. (2013) had one glaring failure in their predictions. Despite using data up to the year 2009, their model completely failed to predict the Arab Spring that started in Tunisia in 2011 and swept throughout North Africa and the Middle East. Instead, Hegre et al. concluded that their forecasts were "most optimistic for the 'Western Asia and North Africa' region, where the incidence of conflict is predicted to be reduced by almost two thirds, from 27% in 2009 to 6.2% in 2050" (p. 261). As an economist and investment specialist, I take solace in the fact that political scientists are subject to the same catastrophic forecasting failures as we are.

Given this improving but still quite shaky track record of forecasting models in geopolitics, we need to be aware that when we discuss the current geopolitical trends that may influence financial markets and the global economy in the coming years and decades, we should not rely too heavily on numerical forecasts. The best we can do is to infer the likelihood of current events causing some future developments and try to identify the most likely scenarios for the future. But we need to be aware that even with the best models we have and with the most careful reasoning, the longer the time frame of the prediction, the more uncertain the prediction will become. Such events as the Arab Spring or the Global Financial Crisis of 2008 can invalidate even the most sophisticated forecasts within months and make their author look like a fool.[1]

My 10 Rules of Forecasting

Over the years, I have learned that making market and economic forecasts is often a futile exercise if one wants to be overly precise. Instead, the best forecasts are often based on a few input variables and a fundamental understanding of how markets work. I have created a personal list of rules for forecasting financial markets, but as it turns out, these rules have also been very helpful in forecasting geopolitical events. Thus, I provide them here, together with a brief discussion of how to use these rules to analyze geopolitical developments.

The following are my 10 rules of forecasting:

1. **Data matter.** We humans are drawn to anecdotes and illustrations, but looks can be deceiving. Always base your forecasts on data, not on qualitative arguments.

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[1]I suspect readers will realize on the basis of these sentences that the author of this book is an economist who has years of training in making excuses for failed forecasts.

- **Corollary A:** Torture the data until they confess, but do not fit the data to the story.

- **Corollary B:** Start with base rates (i.e., the historical average rate at which an event happens). The assumption that nothing changes and an event is as likely in the future as it was in the past is a good starting point but is not the end point. Adjust this base rate with the information you have at the moment.

2. **Do not make extreme forecasts.** Predicting the next financial crisis will make you famous if you do it at the right time but will cost you money and your reputation in any other instance.

3. **Reversion to the mean is a powerful force.** In economics, as well as in politics, extremes cannot survive for long. People trend toward averages, and competitive forces in business lead to mean reversion.

4. **We are creatures of habit.** If something has worked in the past, people will keep on repeating it almost forever. This phenomenon introduces long-lasting trends. Do not expect these trends to change quickly, despite mean reversion. It is incredible how long a broken system can survive.

5. **We rarely fall off a cliff.** People often change their habits at the last minute before a catastrophe happens. Yet for behavioral change to happen, the catastrophe must be salient, the outcome must be certain, and the solution must be simple.

6. **A full stomach does not riot.** Revolutions and riots rarely happen when people have enough food and feel relatively safe. A lack of personal freedom is not sufficient to create revolutions, but a lack of food, a lack of medicine, and injustice all are.

7. **The first goal of political and business leaders is to stay in power.** Viewed through that lens, many actions can easily be predicted.

8. **The second goal of political and business leaders is to get rich.** Combined with the previous rule, this explains approximately 90% of all behavior.

9. **Remember Occam's razor.** The simplest explanation is the most likely to be correct. Ignore conspiracy theories.

10. **Do not follow rules blindly.** The world changes all the time, so be aware that any rule might suddenly stop working for a while or even forever.

Astute readers will have noticed that these rules owe a lot to the work of Philip Tetlock (2005) and Tetlock and Gardner (2016). Tetlock (2005) showed that political experts are often bad at forecasting crucial events. Their forecasts are locked into an existing frame of mind that these experts are unable to change.

Civil Strife from the Fall of Communism to the Arab Spring

Toward the end of the 1980s, experts in the intelligence communities of Western countries did not predict that the fall of communism would occur within a few years' time. They essentially followed my Rule 4 and assumed that because people had not risen against communism in more than two decades, they were unlikely to suddenly do so. And admittedly, following Rule 4 served these analysts well for a long time. But younger analysts were able to see the changing environment and realized that communist countries in Central and Eastern Europe had reached a tipping point, where my Rule 6 could be applied. The injustices of these countries together with the perennial shortages of food and medicine were finally serious enough to trigger a civil uprising. Of course, these analysts had to assume that the governments of these socialist European countries would follow Rule 7 and do anything they could to stay in power.

And this is the true surprise of the events of the late 1980s. The government of the German Democratic Republic did not crack down on the growing demonstrations in Leipzig and other cities. The government in the Czech Republic did not crack down on the Velvet Revolution led by Vaclav Havel, nor did governments of Poland and Hungary crack down on the civil uprisings in their countries. When Mikhail Gorbachev abandoned the so-called Brezhnev Doctrine, which stated that the rule of communism should be upheld, if necessary, by force, the local governments in Central and Eastern Europe had no ability to stop the demands for freedom and democracy. Up to today, the peaceful fall of communism can be qualified as one of the biggest geopolitical surprises of the 20th century. By all accounts, if communism were to trigger civil uprisings, one would have expected long-lasting civil wars as a result.

In essence, this is what happened after the Arab Spring of 2011. The Arab Spring was triggered by fast-rising food prices that hit the poorest people the hardest and caused them to revolt (Rule 6). The resulting uprising led to reforms in the political systems in Jordan and Tunisia but created violent conflicts from Algeria to Syria, many of which have lasted up to the present. The example of the Arab Spring shows that peaceful transitions of autocratic regimes to democratic regimes are rare.

Goldstone et al. (2010) showed that the onset of civil war and international conflict can best be predicted by using only four variables (see also Rule 9), the most important of which is the type of political system that has been established in a country. They found that if a country is a full democracy with open and fair elections, the outbreak of civil war is much less likely than in an autocracy. However, as autocracies evolve into full democracies, they have to go through various stages of partial democracy, where elections are *managed*, and rival political factions can form (typically along racial, tribal, or religious lines).

The risk of civil war is significantly elevated in these stages because the various emerging factions tend to engage in a winner-take-all competition for power. Once a faction has gained control over government resources in such transition economies, it often diverts these government resources to line its own pockets (Rule 8). This situation, in turn, triggers widespread feelings of injustice that can cause civil wars (Rule 6).

According to Goldstone et al. (2010), the outbreak of civil war is more than three times likelier in a partial democracy with factionalism than in a full-fledged autocracy. The onset of adverse regime change is more than five times likelier in a partial democracy with factionalism than in an autocracy. These conditions also explain why almost two decades after the United States invaded Afghanistan and Iraq, the latter two countries remain politically unstable and unable to form a functioning democracy.

These statistics from the research of Goldstone et al. (2010) also explain the existence of what Tetlock and Gardner (2016) called "superforecasters"— people who are extremely good at forecasting geopolitical developments. As Tetlock and Gardner (2016) described in an appendix titled "Ten Commandments for Aspiring Superforecasters," these people have learned to break complex problems down into tractable subproblems that can be solved with data analysis and logical reasoning (Rule 1). Then they start with an appropriate baseline estimate of the likelihood of an event (Rule 1, Corollary B). For example, in an autocracy, the likelihood of a civil uprising has historically been x%. This base rate is then adjusted on the basis of new information.

For example, if the autocracy is abolished and a democracy emerges, the probability of a civil uprising first increases and then decreases. Superforecasters adjust their base rates in light of the information about the nature of the emerging democracies. But unlike many pundits in the news, superforecasters do not become overconfident in their forecasts; they adjust base rates only gradually as new information emerges. They refrain from

making extreme shifts in their forecasts and arrive at extreme forecasts only when a mountain of evidence has forced them to shift the odds in favor of an extreme outcome (Rule 2). This is why Tetlock (2005) states that superforecasters are often seemingly boring people. But this restraint is the secret to their success. My 10 rules of forecasting, which have served me well in the past, also encourage such restraint.

Conclusion

Forecasting geopolitical developments is even more challenging than making financial market forecasts because the subject matter is (1) more difficult to capture with hard data and (2) more prone to the influence of irrational behavior of individual actors and mass behavior that can change seemingly without warning. This lack of hard data and the complexity of the issues at hand also mean that forecasting tools in political sciences are less developed than in economics and finance. The field is making fast progress, however, and forecasting geopolitical developments is getting increasingly better today. By using a combination of data-driven quantitative forecasting models and scenario analysis based on basic rules of forecasting such as the ones described in this chapter, we can at least qualitatively forecast likely scenarios and future pathways for current geopolitical trends.

Bibliography

Bressan, S., H. M. Nygård, and D. Seefeldt. 2019. "Forecasting and Foresight: Methods for Anticipating Governance Breakdown and Violent Conflict." EU-LISTCO Working Paper No. 2 (September).

Goldstone, J. A., R. H. Bates, D. L. Epstein, T. R. Gurr, M. B. Lustik, M. G. Marshall, J. Ulfelder, and M. Woodward. 2010. "A Global Model for Forecasting Political Instability." *American Journal of Political Science* 54 (1): 190–208.

Hegre, H., J. Karlsen, H. M. Nygård, H. Strand, and H. Urdal. 2013. "Predicting Armed Conflict, 2010–2050." *International Studies Quarterly* 57 (2): 250–70.

Klement, J. 2020. *7 Mistakes Every Investor Makes (and How to Avoid Them)*. Petersfield, UK: Harriman House.

Schrodt, P. A. 1988. "Artificial Intelligence and the Study of International Politics." *American Sociologist* 19 (1): 71–85.

Schrodt, P. A. 2014. "Seven Deadly Sins of Contemporary Quantitative Political Analysis." *Journal of Peace Research* 51 (2): 287–300.

Tetlock, P. E. 2005. *Expert Political Judgement: How Good Is It? How Can We Know?* Princeton, NJ: Princeton University Press.

Tetlock, P. E., and D. Gardner. 2016. *Superforecasting: The Art and Science of Prediction*. New York: Crown.