Measuring Global Instability: A Unified Framework for Methodical and Logical Assessment

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Abstract

The aim of this paper is to demonstrate that global instability can be measured mathematically, when using accurate data provided. When the data is available it is possible to predict when Nation states will fall using a variety of existing economic tools but by combining them together into one overarching framework.

The data used when determining the outcome of nation states includes several factors, such as the level of civil disobedience, protests, the policies being brought forward as well as economic factors such as Purchasing Power, Cost of Living, and economic debt.

The paper will show that there is a clear link between civil dissonance levels and the likelihood of a collapse of a nation.

A table of the determining and observable factors has been provided to make the analysis easier for those conducting research and allow for the theories contained in this paper to be testable and be repeated.

Introduction

For centuries, the question of how to predict the rise and fall of nations and empires has captivated historians, economists, and political theorists alike. One of the most iconic examples of an empire's dramatic collapse is the fall of the Roman Empire, which saw the rapid disintegration of the Western world almost overnight. This collapse resulted from numerous intertwined factors, but one of the central issues was the growing instability and discontent within the empire.

This paper proposes that we can predict the rise and fall of nation-states with a high degree of certainty by observing public discontent and leveraging a simple, methodical ranking system. By using indicators that anyone can track, we can assess the stability of a country and foresee potential risks. The goal of this research is to improve upon existing models, offering a new framework that makes it easier to identify and understand the causes of national instability.

Imagine being able to prevent the collapse of a country before it happens: such predictive capability could save billions in humanitarian aid and lead to better-coordinated, more effective policy responses. This paper will explore the current research in the field, introduce an innovative model, and demonstrate how understanding instability indicators can provide a powerful tool for preventing the collapse of nations.

Literacy Review

Other models currently exist that aim to try and determine the instability of an economy such as the Human Health Index. The Human Health Index is a measurement used in economic literature used to determine the general 'health' of people within a given nation (UN, 2025) and although this is an extremely powerful measurement currently in practice, it only goes into certain aspects of society. The Human Health Index only captures educational and access to education to determine the development of a nation and/or region. From an instability perspective this Index although very powerful fails to predict with accuracy Instability. Kilmova (2016) in his article titled *Quality of life as a human development determent in the context of economic instability;* points out that poor education and access to healthcare can lead to instability, they are correct in pointing this out but acknowledged that this is a subjective measurement rather than nominally efficient measure of economic instability – I would argue that these are certainly factors that can lead to instability in a nation but the Human Development Index fails to capture other possible causes of instability within a nation.

Another Index that is used in Economics and political sciences is the Democracy Index to measure instability on a macroeconomic level – essentially this measures the freedom of participation within the political structure within a given nation. In 2017 The World Economic forum published its findings on the World's most open and free nations. Unsurprisingly Countries such as Norway Sweeden and Denmark topped the list while places such as China & Russia were high on the Authoritarian Scale. Around the same time as well in 2018 Yevdokimov, Mlenyk Lylulov et al; in their article titled *Economic freedom and democracy: determinant factors in increasing macroeconomic instability,* make the case that Economic instability can lead macroeconomic instability. Th problem is that these two studies are completely opposite. They try to build a strong case for the authorities, leading to economic instability. However, one study believes this will lead to economic instability, but the research is highly inconsistent. In 2017 China ranked has one of the highest and most powerful economies on the planet- this study was conducted by the International Monetary Fund suggesting that in 2017 just a couple of months before Yevdokimov, Mlenyk Lylulov et al's paper was published that China was on track to grow by 6.7% that year. This suggests that there is something else at play here the Model that we are proposing can and will include these factors among others.

The consumer price index is also used as an economic metric to determine instability factors and article written in 2020 by Sun, Gao, Wang et al; propose an interesting theory about how the consumer price index can determine a countries instability and they provide evidence of the G7 nations. They correctly demonstrate a very strong link between Consumer Price Index & the Purchasing Parody on economic instability – this is due to a lack of purchasing power however they fail to link other determining factors to instability. In 2015 a similar analysis was conducted in 2015 by Blot, Creel & Hubert et al; but tracked this instability over a much longer period and found a direct correlation between the two. Glaeaser & Sustein in 2015 propose a very powerful and highly accurate theory on the relationship between insufficient governance and civil dissilience all three of these articles are extremely strong in their analysis outright but they all fail to connect the interconnected relation between the two –

rather they see their theories as the be all and end all. The Model being proposed brings all these ideas together into one cohesive framework that just like was proposed by Sun, Gao, Wang et al (2020) brings everything together into one simple and measure system.

It needs to also be mentioned that currently the Fragile State Index is a key component used in economic and political instability measurement is a tool used to underscore a country that is currently struggling (Fund for Peace, 2020) it is the most up to date measurement used to determine and underscore states that are in need of assistance however it relies far too heavily on National Security an article by Haken (2023) goes into depth in regards to this and its importance in the framework being proposed he correctly points to Afghanistan and places like Iraq failure due to military concerns however I argue that this model fails to predict a crisis edging and increasing in complexity but wares no bases once a state officially collapses. In fact, this is the opposite of military intervention that can provide mass instability (Hutchinson, 2017). As mentioned the Fragile State Index is an extremely useful tool but it has its limitations and weaknesses and fails predictive power the new improved Model we propose will combine elements of the Human Development Index, the Democracy Index, Consumer Price Index and the Fragile State Index but make outcomes more predictable saving billions of dollars a year in aid and allowing for the use of subjectivity to be reduced even further.

Our model will have the ability and strength of all these Indexes in one simple analysis that can not only be used as a predictive tool but also as a way to carefully analyze complex situations in a safe and meaningful way.

Methodology

The Universal Risk Assessment Model is a model based on the behavior and actions that are visibility taking place within a country from variety of factors such as the wage discrepancy, economic growth, cost of living, inflation and other economic measures that exist tools of measurement already in use. The Model however takes this further and uses determinants of behavior as well to accurately predict outcomes even using the most difficult and extreme examples.

Below is a table of what is being used with a clear explanation of each of the levels being outlined.

Stability Index	Position on Spectrum	Discontent Levels	Visible Behaviors	Risk of Escalation
1	Low Discontent	Minimal Frustration	Peaceful, Stable Conditions	Low
2	Minor	Minor Frustration	Civil Protests	Moderate
3	Moderate	Visible Frustration	Strikes	High
4	High	High Frustration	Civil Unrest	Very High
5	Pressure Cooker	Immense Frustration	Extreme Unrest/Violence	Extreme
6	Crisis	Crisis	State Collapse/Civil War	Maximum

Table 1.1

Explanation of Index Rating

Lavel 1: Low Discontent: States with an Index of 1 -1.9 have a low level of instability – they have strong economies; low risk of conflict; and policies are perceived as good (by majority of society).

Level 2: Minor Discontent: States with an Index of 2 – 2.9 have some problems but they are highly manageable they will have some minor protests taking place – It could be over small things, but these protests are peaceful in nature and are infrequent.

Level 3: Moderate Discontent: States with an Index of 3 – 3.9 have some major problems that need to be resolved, or risk being escalated further. Usually, it relates to cost-of-living Inflation and a combination of many things. Protests are frequent and contain many protests – Policy introduction or Intervention plans that have ben miscalculated at this level can lead to some severe consequences. – Thing of the Human Rights Protests of the 1960's these were peaceful but frequent with a large number of protestors.

Level 4: High Discontent: States with an Index of 4 – 4.9 have significant problems and this is the level where appropriate must be considered – Please note that from numerous historical assessments **4.6** appears to be a tipping point where the states can no longer sufficiently maintain internal control by this point external intervention is likely required as discontent

has reached a point where it can no longer be maintained on a long term bases. – Think of military coup in turkey.

Level 5: Pressure Cooker: States with an Index of 5 – 5.9 are ticking time bombs of collapse and will collapse without significant changes to leadership, policies and economic conditions. Essentially force or other heavy-handed tacticsthat have been used will only temporarily suppress discontent, but the warning is the discontent is simmering below the surface and will likely explode into full out rebellion, in a very public and violent way. – Iran's violent crackdown on protestors.

Level 6: Crisis: States with an Index of 6 have already collapsed or under civil war think of Afghanistan of Syria – the country essentially has no government and there is anarchy. Lawlessness reigns supreme.

The spill-over effect:

There are other factors that also need to be considered when using this framework for measuring the instability of Nation States, that's the spillover effect.

In times of conflict, uncertainty and war, some of the population may panic or be forced to flee to nearby nations. This instability in one nation will lead to an elevated risk of the surrounding nations as well as friendly nations that trade with them.

Spill over events could be Tariffs that hurt other nations economically, war, conflict refugees and natural disasters.

By using these two concepts the Framework can predict the collapse of Empires, States and even if a regional conflict may arise.

Below are three 'Historical' examples to illustrate the effectiveness of the Universal Risk Indication Model.

The Second Punic War

218 BC	
The Roman Republic	Empire of Carthage
3.2	3.1

Both Nations are at the height of their power- Carthage is a powerhouse, and its trade is sprawling however they are overextended and currently.

Rome has just waged war against the Greek city states meaning stability has returned but Rome has lost men and money from funding the war.

Some moderate protests existed with some minor grievances and the remnants of the First Punic War and the harsh conditions delt to Carthage leave both nations at a Moderate Risk of Instability.

Carthage now has a slight advantage in taking an initiative and this is exactly how things playout historically.

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217 BC – Hannibal's Invasion	
The Roman Republic	Empire of Carthage
4	3.5

Just two years on into the war and with the Invasion of Hannibal into Northern Rome, Rome's political risk factor has increase from 3 (Elevated) too 4.2 – Rome is clearly at a disadvantage and is clearly losing the war with some of the provinces switching sides and with Rome loosing large amount of forces however Rome historically has proven to be more stable due to his government structure than other ancient civilizations.

Carthage was at 3 previously but is now at a 3.5 a large increase but still at a reasonably manageable level. Their instability factor has risen because they are at war with another nation meaning less resources for the public. More resources and being directed to the military creates food shortages for some people and increases the number of protestors.

If things continue without any major changes Rome will eventually fall.

214 BC-217 BC – Hanibal in Rome	
The Roman Republic	Empire of Carthage
4.3	3.6

After the defeat of Canne Rome continues to increase in instability, they are now reaching close to the edge of collapse but again compared to most ancient civilianization's Rome can endure more than most however they are one last defeat away from complete collapse.

Carthage still has a very clear advantage however their risk indictor is still rising because more men a dying and they still need to fund the war – their Risk Indicator is increasing slower than Romes is.

213- 206 BC – The Fabian Strategy	
The Roman Republic	Empire of Carthage
4	3.8

The strategy of containment against Hannibal works there's still a significant amount of chaos but it is subsiding as Hannibal has to decide on whether to attack Rome directly or protect his allies in the North. As a result of this Rome's Stability Indicator drops slightly. Some of the pressure that was being felt has eased slightly.

The war is on Roman soil which means they do have an advantage of having a military presence in one location.

Carthage s risk factor Indicator continues to rise as the cost of funding the war continues to hurt the credibility of the government domestically. Resources continue to flow to Hannibal

in Rome hoping to end the war swiftly. In ancient times it could be weeks before knowledge of the war reached capital cities.

20 3BC -207 BC – Battles in Spain	
The Roman Republic	Empire of Carthage
4.2	4.5

The war is now at a breaking point and both nations are on the verge of collapse both resources are drained – Romes Stability Indicator rises again slightly from previous period of time as they are raising a new army and organising a last ditch effort to win the war – Rome by now has won some very key victories in Spain which does allow for some much needed funds to arrive back home.

Carthage continues to fund the campaign, but Hannibal is unable to break the stalemate and the war that appeared to be won has now slightly shifted in Romes favor, Spain was a huge source of Silver. Losing this key region Carthage has effectively been starved overnight and returned to its state, post the First Punic War.

Rome has regained the upper-hand and has regained the initiative.

202 BC- Battle of Carthage	
The Roman Republic	Empire of Carthage
4.5	5

Romes Instability factor continues to increase as war drags on, the funds help but not as much as they would outside of war times. Rome is still short on manpower however the war is now strongly in Roman hands. If Rome fails to gain a deceive victory it will also collapse under its own weight.

With parts of Carthage sacked and Hannibal losing in Carthage, Cathage is under siege, there are mass calls for the war to end with violence in the streets, the state of Carthage has completely lost control of the situation.

Rome wins but is financially on the brink of collapse the end of the war in the next few months will see Romes's risk Indicator decrease but slowly.

At the end of the Second Punic War Rome allows Carthage to spiral out of control. This is the justification Rome gives for burning it to the Ground in the Third Punic War.

As you can see from the Second Punic War example the ranking system can give an indication of how unstable a country is, The Model clearly demonstrates (in numbers) who had the advantage and when the tide shifted. At each interval the Stability Index alone could demonstrate precisely what was happening internally and add weight and depth to the events and analysis.

Pre-Soviet Union Collapse

Year 1986	
Region	**Instability Index**
Armenia	3.5
Azerbaijan	3.6
Belarus	3.4
East Germany	3.7
Estonia	3.5
Georgia	3.6
Kyrgyzstan	3.6
Kazakhstan	3.6
Latvia	3.7

Year 1986	
Region	**Instability Index**
Lithuania	3.8
Poland	3.9
Romania	3.8
Russia	3.9
Turkmenistan	3.4
Tajikistan	3.5
Ukraine	3.9
Uzbekistan	3.8

As you can see above these are the predicted Stability Index numbers for 1986. This is five years before the full collapse of the Soviet Union.

The further West you go the more unstable the different regions of the USSR become, and this is because pre-WW2 they were democratic.

The Numbers even in 1986 can show that there are moderate issues with places like Poland and Romania being the worst – this also shows that these are the problem regions for the USSR that need attention (even five years before the collapse)

Year 1987	
Region	**Instability Index**
Armenia	3.8
Azerbaijan	4
Belarus	3.5
East Germany	3.9
Estonia	3.8
Georgia	4.1
Kyrgyzstan	3.7
Kazakhstan	3.8
Latvia	4

Year 1987	
Region	**Instability Index**
Lithuania	4.2
Poland	4.2
Romania	4
Russia	4.1
Turkmenistan	3.6
Tajikistan	3.7
Ukraine	4.2
Uzbekistan	3.8

In just one year every single Nations Instability Index has increased - 4 are steady but have not reduced.

In 1986 just 12 months prior you have zero states at Level 4 but in one year the Soviet Union now has six.

The Spillover effect also occurs and has accelerated this process of decline as neighboring states become more unstable.

The numbers also show that the biggest concerns will be in Ukraine, Romania & Poland this reflects what happened in real life.

The numbers also show that the Soviet Union could have implemented some better policies to intervene at this point to quell some of the rebellion; but the issue also is that empires are even more complex with their different ethic regions.

We are still four years away from the full collapse of the Soviet Union, however in 1987 there is still time to prevent the collapse. The longer the situation is ignored, or bad policies are produced the faster and more he evitable occurs.

Year 1988	
Region	**Instability Index**
Armenia	4.2
Azerbaijan	4.3
Belarus	3.7
East Germany	4.2
Estonia	4
Georgia	4.3
Kyrgyzstan	3.9
Kazakhstan	3.8
Latvia	4.3

Year 1988	
Region	**Instability Index**
Lithuania	4.4
Poland	4.5
Romania	4.2
Russia	4.3
Turkmenistan	3.8
Tajikistan	3.8
Ukraine	4.3
Uzbekistan	3.9

By 1988 eleven states within the Soviet Union have reached Level 4 on the Instability Indictor ranking and just like in real time there were mass revolts and referendums held in Poland.

The numbers clearly show that the Western Nations have reached a boiling point and this is reflective in what happened as well.

At this point in time with such a complex situation unfolding and Russia also suffering the same turmoil the model predicts a spiral to occur of which the Soviet Union is now in and will collapse.

Year 1989	
Region	**Instability Index**
Armenia	4.3
Azerbaijan	4.4
Belarus	4
East Germany	4.8
Estonia	4.6
Georgia	4.9
Kyrgyzstan	4.2
Kazakhstan	4.2
Latvia	4.6

Year 1989	
Region	**Instability Index**
Lithuania	4.7
Poland	4.7
Romania	4.6
Russia	4.6
Turkmenistan	4
Tajikistan	4.1
Ukraine	4.5
Uzbekistan	4.1

In history, 1989 was the year for independence movements wirhin the Soviet Union. By this stage is The USSR is completely collapsing, the figure I mentioned earlier as the tipping point 4.5, eight Soviet States have surpassed that and every single one of them had independent movements except for East Germany.

East Germany is at a 4.8 -The Berlin wall was torn down in 1989 and the ranking clearly shows a huge event taking place – however it has not reached the critical juncture of Level 5 by this point. This is because the anger of the people violently protested but against a symbol of oppression – the Military stood by and could not do anything, so force was not used in this instance leading to a ranking above 4.5 but below 4.8.

The Model can clearly show that by 1988 the USSR is in a tailspin and heading towards collapse (3 years before its collapse).

The Model also predicts the first domino to fall would be Poland reflecting real life history.

The Spillover effects also clearly show why Ukraine Romania & the Neighboring Baltic states follow suit as they are aligned closely with Poland. With Poland's rapid movements towards independent this also emboldened their allies.

The Model also has a strong prediction rate of a nation hitting 4.6 and revolution occurring in this example it predicted every single nation.

World War 1- Predictions

Year 1909	
Austria-Hungry	4.2
Argentina	4
Brazil	3.5
China	4.5
Egypt	4.3
Estonia	4
France	3.6
Germany	3.8
Italy	4
India	4.2

Year 1909	
Japan	4.2
Latvia	3.7
Lithuania	4.2
Ottoman Empire	4.4
Russia	4.3
Serbia	4.5
South Africa	3.8
United Kingdom	3.3
United States	3.6

Five years before World War 1 occurred the Index rankings show something extremely interesting.

We see a world across all regions that is unstable every single one of the states listed above (major players & other randomly selected states) are at 3.5 or above suggesting major protests poor economic management or a combination of the two.

France & Germany are more stable than the Baltic region and places like the USA and Brazil will be the furthest away from the future conflict and have the lowest Instability Rankings.

China is sitting at the figure 4.5 it faced significant rebellions but managed to stay afloat – it did not surpass the 4.5 Ranking which both previous examples have shown is the magic point of no return.

Year 1910	
Austria-Hungry	4.5
Argentina	3.5
Brazil	3.5
China	4.8
Egypt	4.4
Estonia	4.3
France	3.5
Germany	3.8
Italy	4
India	4.3

Year 1910	
Japan	3.8
Latvia	4.2
Lithuania	4.3
Ottoman Empire	4.6
Russia	3.7
Serbia	4.7
South Africa	4
United Kingdom	3.3
United States	3.2

By the year 1910 the world is already on edge and was the year of nationalist movements in the Baltic States – you can also see that the numbers are extremely high.

The World is about to have a major conflict on its hands and the Instability Index shows the spark will occur in the Balkans not France & Italy.

Meanwhile other European nations are still rising in instability due to the spillover effect.

China's instability continues to rise and just from their 4.8 level this shows that China still has control of its military but China at least the current government is about to collapse.

Year 1911	
Austria-Hungry	4.6
Argentina	3.2
Brazil	3.2
China	5
Egypt	3.7
Estonia	3.5
France	3.5
Germany	3.7
Italy	3.8
India	3.7

Year 1911	
Japan	3.8
Latvia	3.5
Lithuania	3.5
Ottoman Empire	4.8
Russia	4.8
Serbia	4.5
South Africa	3.5
United Kingdom	3.2
United States	3

By 1911 the model shows that the world has somewhat stabilized countries such as Brazil, the USA the UK even France and Germany – they are slight improvements in numbers, but they are impactful this suggests that World War One could have been avoidable.

China is an outlier and in 1911 the Quing was overthrown with an Instability Index of 5 the Model correctly predicts this taking place.

Russia is also an outlier, but it is on the verge of a significant revolution there is a pressure cooker level of distrust from its own people.

While every nation in Europe is decreasing including the Balkans Austria continues to rise in Instability and suggests that it will be the cause of a future conflict – it is also at a level where they are about to lose full control of the situation which is exactly what historical events demonstrate.

The Ottomans are also on a decline hence the name 'The Sick Man of Europe'. – They are all but essentially finished as a nation.

War is highly likely to occur, but a World War is highly unlikely.

Year 1912	
Austria-Hungry	4.8
Argentina	3.2
Brazil	3.2
China	5
Egypt	3.7
Estonia	3.6
France	3.6
Germany	3.9
Italy	4
India	3.7

Year 1912	
Japan	4
Latvia	3.6
Lithuania	3.6
Ottoman Empire	4.9
Russia	4.8
Serbia	4.3
South Africa	3.6
United Kingdom	3.4
United States	3

By 1912 the tensions in Europe have risen again but mainly due to the spillover effect.

Austria-Hungry continues to destabilize which impacts the Balkans.

Other nations like the UK that are not on the mainland but continue to rise even though they are quite far away from the conflict.

War is anticipated but it's between Austria-Hungry & Serbia – The instability Index show that Serbia was slowly stabilizing but Austria-Hungry continues to destablise -The War between Serbia and Austria Hungry is coming and it will trigger a chain of reactions that will cause World War 1 due to the alliances that were taking place at the time.

Germany & Italy's instability Index ranking has risen more than anyone else in Europe due to the alliances that it existed at the time.

Year 1913	
Austria-Hungry	5
Argentina	3.3
Brazil	3.4
China	5.5
Egypt	3.8
Estonia	3.7
France	3.6
Germany	4
Italy	4.1
India	3.8

Year 1913	
Japan	4.2
Latvia	3.8
Lithuania	3.8
Ottoman Empire	5
Russia	5
Serbia	4.5
South Africa	3.7
United Kingdom	3.5
United States	3.1

By 1913 the world tensions are palpable, majority of the major heavy hitters of World War 1 are at 4.5 or above. Russia, the Ottomans, Austria-Hungry & Serbia – one small miscalculation will lead to an event cascading into a major conflict.

The ‘nothing to lose’ mentality also comes into play, if these nations sit by and do nothing, they will lose control of their militaries.

China in 1913 had a violent overthrow and the Index shows this, and it lines up with real life events.

The world was already heading towards war and the spillover effect in places like the USA& Brazil who are far away from mainland Europe also rise.

Places such as India and South Africa rise more than other none aligned Commonwealth Nations anticipating a major European conflict with the potential of UK involvement.

As you can see the model has successfully been able to predict the start of a major conflict – without the need for complex explanations instead their Instability Rankings alone can explain what is happening.

The spillover effect in this Historical example is also extremely strong especially as war continues to edge close.

Future Applications

We have seen how this Model can accurately predict future events just from observation on a national level, but this model could be used for individual nations predicting unrest on a regional level as well.

This would allow state/provincial governments to predict and act to regional distresses that may lead to feathers more widespread unrest.

This model could work in tangent with a heat map where you could visibly see troubled regions and where assistance is needed preventing conflict before they even occur.

This Model also has the ability to measure military impact and predict likely victors' soul based on their evolving Instability Index Ranking as seen from the Second Punic War Example.

This Model could also be used for Businesses looking to invest in different nations ensuring their investments are secured just by pure stability numbers alone.

Conclusion

As you can see from the three Historical examples the Instability Index is able to predict outcomes before they occur.

The Index takes into consideration economic and political conditions as well as human behavioral alliances and spillover effects.

The Instability Index could be used to determine Instability and help save billions in foreign aid every year, leading to more practical and specialized interventions.

Th Model also shows how devastation can arise if countries are in significant decline and how miscalculations can lead to a collapse of even the most formidable states.

The Index is easy to use and simple to read and easy based on observation.

No model is perfect and there are risks associated when using the instability Index there may be observation bias from the researchers conducting the analysis to remove and mimes these risks is to use current data that already exists and given to the hands of wider professionals and getting creditable information such as from the World Economic Forum, the World Trade Organisation or the United Nations.

By using widely accepted data this increases the creditability of the analysis being conducted and can lead to an accurate prediction of world events. This model doesn't break down existing theories or industry measures enhance their usefulness. The Instability Index Model creates an objective and meaningful way to measure instability in a predictable and simplistic way. This model would be an extremely useful tool for businesses, local governments, international organizations and not for profit organisations alike, it would allow them to predict a crisis before they happen and intervene before they reach a critical tipping point. This model will save time, money resources but more importantly lives in the process.

Acknowledgements

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