

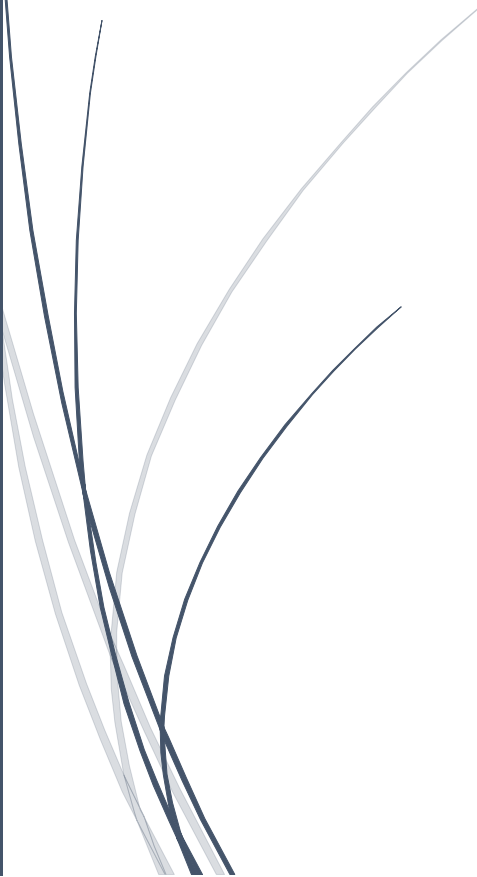
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## Systems Thinking Applied to the European Financial Crisis

An in-depth understanding of the Problem, and Proposed Interventions that Promote Short, Mid, and Long-Term Stability & Growth

Jéssica Akemi  
Samuel Dowd  
Mehmet Eren Kucukcolak  
Lisa Paquette  
Sergiy Shevchenko  
Paulina Vachet

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DR. MARK ESPOSITO  
MGMT S-5012: SYSTEMS THINKING  
HARVARD UNIVERSITY SUMMER SCHOOL

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## 1. Executive Summary

The financial crisis in Europe has posed major threats but has also allowed opportunities for growth. Measures, such as strict fiscal austerity, have failed and even worsened the crisis, pushing many countries further into recession. The European crisis has been analyzed through a Systems Thinking method in order to identify and understand patterns of behaviors that aggravated the crisis. Leverage points at which change could be implemented were then found, using a holistic and human-oriented approach. The main objectives of this work were to understand underlying problems and gain insight into what could help European leaders make decisions which would help countries facing economic and political instability grow in a sustainable way, give hope to the European populations, and prosperity for the Union as a whole. It was determined that shared vision between European member states plays a critical role in the process of recovery from the crisis, and that the European Union should seek common goals in order to overcome the upcoming challenges successfully. A plan of action with possible interventions that would benefit the European Union was defined as well as its possible consequences in the short, mid, and long-term. It includes political and economic reforms, more unification of the EU, incentives for Small and Medium Enterprises, growth strategy according to needs and resources available in each country, and the implementation of GNH (Gross National Happiness) as a complementary measure to GDP.

## 2. Introduction

Since 2008, following the 2007 collapse of the United States economy, the 500 million inhabitants of the European Union have watched a number of member states fall victim to a severe financial crisis. Since its formation in the early 1950's, the Union has never seen such tumultuous economic times. With countries like Greece facing insolvency, Cyprus facing a

severe cash crisis, and France facing protests from its own citizens, the economic crisis was not simply impacting the market, or currency, but the lives of all Europeans. A series of stopgap measures such as bailouts, cash infusions, and austerity measures were good for solving the short term problems, but no solution to this point has delivered a path out of the crisis and towards prosperity.

Systems Thinking theory and practices were applied in order to examine and propose recommendations that cannot only patch the current crisis, but put the European Union and its half-billion citizens on a path for recovery and prosperity. In the process of evaluating the crisis and determining interventions, we used Systems Thinking to take a more holistic and human-oriented approach to the crisis. By using the Systems Thinking approach, it was possible to identify patterns of behavior, understand what created them, and determine the leverage points at which it is possible to create changes that will affect these patterns. Only an analysis that explores all parts of the problem from politics, to economics, to individual human happiness as a system will create essential insights that might help politicians to make sustainable decisions.

### 3. Definitions

#### 3.1. Reinforcing and Balancing Loops

Systems Thinking language has been used in order to provide a better understanding of the mapping process used to examine the crisis. Positive reinforcing loops, for example, are behaviors that reinforce one another and promote an increase in the elements. Similarly, negative reinforcing loops are sets of elements in the system, which when combined lead to negative growth or deterioration. Lastly, there are balancing loops, which keep elements within the loop at a constant position. These loops exist in every system. It might also be created by

interventions, so that the elements counteract each other and force balance within the system or loop.

### 3.2. Archetypes

Archetypes are system structures that produce common patterns of problematic behavior (Meadows 111). The destruction it causes is often blamed on particular actors or events, although it is actually a consequence of systems structure. Standard responses such as blaming, disciplining, firing, twisting policy levers harder, hoping for a more favorable sequence of driving events, tinkering at the margins, will not fix structural problems. It can be altered by “reformulating goals, by weakening, strengthening, or altering feedback loops, by adding new feedback loops, which allows the creation of opportunities” (112).

- Success to the Successful

The trap of success to the successful is found whenever the winners of a competition receive, as part of the reward, the means to compete even more effectively in the future. This archetype does its greatest damage in the many ways it works to make the rich richer and the poor poorer. The success to the successful loop can be kept under control by putting into place feedback loops that keep any “competitor” from taking over entirely (Meadows, 129).

- Policy Resistance

Policy resistance is also known as “fixes that fail”. It comes from bounded rationalities of the actors in the system. In a policy-resistance system, actors work towards different directions, and everyone has to put great effort into keeping the system where no one wants to be. Such resistance arises when goals of subsystems are different from and inconsistent with each other (Meadows, 113).

### 3.3. Fragility

A system can never exist on its own, and random factors can either help or hurt the system at any time. Fragility is the term we use to describe a system's ability to react to these random factors and maintain its path. A fragile system allows these random shocks to break the system and deteriorate it. On the other side, a robust system is not impacted by the shocks and continues on its path. The ideal, however, is anti-fragility: a state where a system is built so that it can absorb the shock and develop methods and strategies to deal with greater shocks in the future. In other words, an anti-fragile system is able to gain valuable knowledge and insight from each shock in order to further strengthen itself from future, potentially more detrimental shocks. The goal of any system is to make it anti-fragile so that it cannot only absorb shocks, but also respond positively to them in ways that protect it from further shocks of greater intensity and/or complexity.

### 3.4. Invisibility

Invisibility occurs when people or communities (in this case a member state or subsets of the European Union population) are unable to meaningfully set themselves apart from others and stand out on their own. Invisibility can be the result of harsh stereotypes, an inability to shed old personas, or a lack of distinguishing contribution. In the European Union some member states are invisible because they do not produce a highly desired product, or because over the decades they developed a bad reputation. Similarly, some people are seen in a negative light despite overcoming the very characteristics that got them that reputation in the first place. It is important to empower and give the necessary tools to help people and communities become more visible.

### 3.5. Congruence

Congruence is the idea that each individual is true to themselves, and acts and makes decisions based on their own feelings and intuition as opposed to society's vision of what they should do. In order for a country to have its people truly and effectively support policies and decisions, it needs to generate a shared vision instead of benefitting from the incongruence of others. Often in systems, the elements support the policies because they feel obligated. This generates incongruence. On the contrary, shared vision is when members of the system support the policy because they share in the vision of the policymaker. The policymaker has made the benefits clear, and the followers genuinely believe in the movement, staying congruent, rather than shifting their belief system or sense of self in order to conform to a society's description of who they should be.

### 3.6. Gross National Happiness

Gross National Happiness (GNH) is an indicator that measures the quality of life in holistic and psychological terms. It is based on nine factors, or domains, including Education, Health, Psychological Well-Being, and other measurable elements that, when combined, represent a country's level of happiness. The GNH movement suggests that if goals are benchmarked based even partly on a country's happiness then it will be far more successful than current benchmarks alone like GDP.

### 3.7. Small and Medium Enterprises

SMEs are an integral part of any economy. The importance of SMEs became apparent through research and in the development of the map, narrative, and interventions. One SME can provide local and meaningful jobs for a population. Several SMEs can have a profound effect on a local

population. And similarly, on a national scale, SMEs can combine efforts to deeply impact the economic progress of an entire Union.

### 3.8. Interventions

Interventions are changes that can be made to the elements in the loops that have been identified, and that will either cause a change in direction, or promote more balance. These interventions are recommendations for driving the European Union out of crisis and into a consistently anti-fragile and sustainable system. As Donella Meadows, a world-renowned Systems Thinker, states in her book, “you can't navigate well in an interconnected, feedback-dominated world unless you take your eyes off short-term events and look for long-term behavior and structure” (Meadows 87).

## 4. Map Summary

[Purple line] Austerity measures directly affect the wages and government spending in a negative way. Austerity measures also increase social instability and unrest. This instability reflects on public behavior and provokes protests and strikes. All this increases the instability of the country and of the EU. Although the austerity measures are designed to increase the country's ability to pay debt, they mostly endanger the countries ability to pay that debt. The more a country is unable to pay debt the more austerity measures are taken. Consequently, this can lead to a negative reinforcing loop, making it nearly impossible to pay the debt back.

[Dark blue line] The lack of shared vision and alignment between influential figures reported through the media increases speculation and causes instability. The more speculation, the more instability is created. The more instability, the more the media focuses on it, even further increasing the speculations. This establishes a positive reinforcing loop. Speculations about the



possibility of any member leaving the eurozone, for example, increases instability because it threatens the existence of the European Union and affects the stability of the euro, extending the crisis globally. Another example is the haircuts in Cyprus, which created local chaos, affected public opinion, and created fear in other countries. The way media reports actions might be different according to regions, which has an affect on public opinion. It creates resentment and increases division between countries, which leads to a decrease in EU credibility and creates even more instability. The more instability created, the less EU credibility and the more instability there is, creating a positive reinforcing loop. Alignment and shared vision lead to good governance, which positively impacts GNH, increases EU credibility, decreases negative speculation, and creates stability in the European Union as a whole.

[Pink line] The instability created in the system increases systemic risk and fear. Fear decreases investors positive expectations about the market, leading to a decrease in investor's confidence and an increasing cut of costs within companies. Cutting of costs leads to an increase in company margins, which will balance their expectations and keep them active in the market. The more the instability and fear of the investors, the more they reallocate their money to safer investments (for example, government bonds of strong economies), which affects the strength of the economy. Economic strength affects risk, investor's confidence, interest rates, companies' demand for loans, and investments. During periods of instability, weaker economies become uncertain, which decreases investors' confidence and leads to a decrease in investments. In addition, higher interest rates and low investor confidence lead to a decrease in a company's demand for loans. A decrease in demand for loans decreases investments, which increases interest rates and decreases even more companies' demand for loans, creating a negative reinforcing loop. It leads to a decrease in bank activity and capital flow, which increases

stagnation and also negatively impacts investment. A decrease in investments negatively impacts economic activity. Unemployment rates rise, while GDP and the ability to pay debt is negatively affected, creating even more instability. This establishes the archetype of the “Success to the Successful” in which strong countries accumulate wealth and weaker (riskier) economies get stuck in a downward spiral: less investments, more unemployment, decreases in GDP, more debt, higher interest rates, and the inability to repay loans.

[Yellow line] Economic activity is strongly affected by the manufacturing and services sector, which positively affect global competitiveness. Local entrepreneurship leads to more businesses in both sectors, which enhances economic activity and leads to the creation of jobs. The more manufacturing in a country, the more export capacity and the less need for imports. This decreases the fragility of the system and increases the ability of the country to recover from a financial crisis through a gain in competitiveness.

[Light blue line] Local entrepreneurship leads to a larger SME sector, which increases the number of successful enterprises. A larger number of successful enterprises leads to an increase in entrepreneurial confidence; and the more entrepreneurial confidence, the more local entrepreneurship, fabricating a positive reinforcing loop. Entrepreneurial confidence is also influenced by media, education and policies dictated by governments. Tax and regulation disparities between countries also play an important role in the inequality of the entrepreneurial activities.

[Red line] Local entrepreneurship increases the opportunities for innovation and creation of value, which leads to sustainable economic growth. Sustainable economic growth decreases the fragility of the system and is favorable for local opportunities. An increase in local opportunities leads to the creation of jobs, which prevents the atrophication of skills and thus increases the

skilled labor force, which reinforces innovation, generating a positive reinforcing loop. On the other hand, the lack of local opportunities increases the shift of labor, decreasing local development, and decreasing local opportunities, creating a brain drain (negative reinforcing loop). It reinforces development in the areas with opportunities for innovation, creation of value, sustainable growth, and increases those local opportunities (positive reinforcing loop). With more opportunities, developed areas will have less shifting of labor, maintaining a balancing loop. Shifting of labor, if not in equilibrium, increases inequalities between member states by strengthening the economy in some, while weakening it in others. Inequalities also impact public opinion and might create an environment more susceptible to instability.

[Black line] Inequalities across countries increase stratification, polarization, discrimination (which affects empowerment of the youth), and stereotyping, which increase invisibility and negatively impact psychological well-being. Inequalities across countries also decrease cultural diversity and resilience, which is one of the components of GNH.

[Green line] Employment increases access to basic needs, which also increases education. In addition, the more education, the more access to basic needs, forming a positive reinforcing loop. Employment decreases uncertainty, increasing the capacity to plan for the future, and increasing empowerment (mainly for young people), which together with the a work/life balance positively affects people's psychological well being. Ecological diversity and resilience creates a better environment for people to live in. This also affects psychological well being and increases people's overall health. These factors increase the positive prospect of life and result in higher GNH for individuals. Government spending can be negatively affected by austerity measures. It increases pension cuts, decreases employment access and the investment in human capital as well as in the community. This eventually leads to a lower GNH. Additionally, employment and

social instability affects GNH through living standards. Employment also has a direct affect on purchasing power which affects economic activity by creating a positive reinforcing loop.

## 5. The European Union explained as a System

### 5.1. Austerity Measures: Results and impacts on development

Austerity measures and structural reform programmes have been implemented in some countries in Europe in order to reduce its budget deficit through cuts in government spending and/or tax rises (Austerity Measure); however, it is pushing nations further into recession. According to Eurostat, the unemployment rate in Greece, for example, rose from 7.3% in May 2008 to 26.8% in March 2013. These statistics have been even worse for young people. The youth unemployment rate reached 52.2% in March 2013. It has led to dissatisfaction, public uprisings and strikes that are reported by national and foreign media, creating even more instability and chaos. In addition, United Nations experts have warned that austerity measures implemented in Greece are undermining people's access to jobs, health, water, and energy ("Austerity Measures in Greece"). Therefore, austerity measures are a traditional but not the best approach to "fix" the crisis. The decrease in government spending might lead to a short-term decrease in deficit, but it also leads to long-term costs in the system.

"To shift attention from the abundant factors to the next potential limiting factor is to gain real understanding of, and control over, the growth process" (Meadows 102). When governments implement austerity measures, they might not be aware of the next potential limit factor of growth such as functioning families, skilled labor, and innovation. This is related to bounded rationality, which means that people make decisions based on the information they have, without foreseeing the impacts of their actions on the whole system. Meadows argues that instead of finding a "long-term optimum", people tend to choose short-term solutions and will not be

willing to change their behavior unless they are forced to (Meadows, 106). She explains that in order to expand rational boundaries, people must get an overview of the system and “from a wider perspective, information flows, goals, incentives, and discentives can be restructured so that separated, bounded, rational actions do add up to results that everyone desires.”

## 5.2. Shared Vision and Media Influence

The world in which we currently reside is one of instant communication. Influential figures as well as anyone with access to the internet can pass information through numerous forms to anyone, anywhere. Varying opinions are commonplace with the media playing a crucial role in this detachment. In their attempt to provide objective information it has been proven that both public opinion and the media have a significant impact on foreign policy (Robinson).

According to BBC News, a Greek daily newspaper printed a mock photo of the German Chancellor Angela Merkel in a swastika armband, linking the government with the Nazis. A popular Greek cartoonist also drew satirical drawings based on a growing anti-German feeling and states that “Germany has already tried twice to make Europe German” (Lowen). This leads to a division between member states that ultimately affects the EU’s international credibility. In contrast, German headlines state « Bank rescue: Cyprus begs the EU for help again », and by doing so paints Cyprus as a lesser country (Granitsas, Persianis). Another newspaper writes “Rich Cypriots, poor Germans” implying that Cypriots are in fact much richer than Germans because they pay less taxes. This leads to a growing feeling of unfairness in Germany. The population does not understand why they should support countries in which the people are richer. This shows the influence of the media in creating division within the EU ([Steltzner](#)).

Interventions of influential figures through actions such as the Cyprus bailout contribute to the division within the EU, both by affecting public opinion in all countries but also by making

Cypriots directly resent the countries they perceive as being responsible for their misfortune, namely Germany. Through the media, fear was spread to other small EU countries such as Malta, where newspapers state that “Eurogroup’s treatment of Cyprus is an “eye-opener” for Malta, Luxembourg” (Stagno-Navarra). The article continues to say that if this is what they did to Cyprus, Malta is not safe since its banking sector is even larger.

The way in which a political leader addresses the other member states can greatly influence the opinions of the population. British Prime Minister, David Cameron held a speech in January 2013 about eventually holding an in-out referendum on Britain’s membership in the EU (Sparrow). This triggered reactions from other political figures across Europe such as France’s Foreign Minister, Laurent Fabius who said, "If Britain wants to leave Europe we will roll out the red carpet for you”. By saying this he was referring to David Cameron using the same phrase to welcome wealthy French tax exiles to Britain. Europe’s reaction to Cameron’s speech was that it was” selfish, ignorant, dangerous” (brown). This again shows the lack of alignment between the political leaders in the EU.

The more they put forward their shared vision for the EU common interest through those speeches the more positive the public opinion is likely to be. Such an entity cannot have international credibility without showing a unified front to the rest of the world. Since the system is greater than the sum of its parts, if the EU is well governed and unified, all the countries can be better off, which would increase the GNH of the EU as a whole.

The stability is related to the media and once again leads to speculations as to what might happen in the future, creating a positive reinforcing loop. Such speculations and discrepancy could for example be about whether a country is at risk of leaving, willingly or not, the Eurozone.

Following the Domino Effect Theory, a member state leaving behind the currency would

threaten the existence of the Union and therefore affect its stability through the instability of the Euro value.

### 5.3. Effects of Instability on Investments

Political instability and speculations enhanced by the media aggravate financial instability which creates systemic risk. Trichet explains that Systemic Risk is “the threat that the actions of millions of individuals, all acting in pursuit of their own interests, can cause a breakdown of the world’s ecosystem, a global catastrophe which will ultimately damage everyone.” In an economic environment, it can result in high unemployment rates and massive increase in public debt, as seen in some EU member countries hit by the European financial recession.

Systemic risk increases fear among investors, who reallocate their investments when facing a financial recession. The Economist reports that “In continental capitals and bank boardrooms there is a common fear. It is that the slow jog of deposits leaving banks (in Greece and, more recently, Spain), may turn into a full-blown run that quickly spreads from bank to bank, and then from country to country.” Economic stability is affected by the total foreign investment capital, which reflects the actual performance of the country in attracting investments (Foreign Direct Invest). An increase in risk due to a decrease in investments negatively impact investors’ confidence, which will make them less likely to invest. It creates a downward spiral in weaker economies, in contrast to an upward spiral in stronger economies, which are seen as “safer” and attract more investments. In addition, investments increase money supply, which impact interest rates for loans. A decrease in investments in a country decreases the money supply available for loans. Therefore, interest rates increase, which discourage investors and companies’ demand for loans, and negatively impact bank activity, capital flow, and economic activity. It creates an

economic stagnation that has been worsened by the fact that banks have stopped lending to each other because of fall in confidence within the member of the Eurozone (Eurozone Banks).

The fear factor also affects investors expectations about the market. During periods of financial instability, demand decreases and companies have to cut costs in order to maintain profit margins, which affects not only prices, but also wages. It might increase unemployment as well, which slows down economic activity and decreases GDP.

High debt is not the problem, but the inability to pay it back. The US, for example, has 106% of debt/GDP, the UK 390% as June 2011 (The World Bank). When the economy becomes stagnated, the countries get further into recession because of their inability to pay debt, which increases even more instability - establishing a negative reinforcing loop.

#### 5.4. The importance of SME's

Fear creates a sense of danger that is a leading culprit in warding off entrepreneurs in their quest to develop sustainable enterprises. The fact does remain that not every business will succeed.

However, if no one is willing to take that leap of faith, new companies will not be created. With no new companies, none can succeed, leading to no further entrants into the market. Creating a favourable entrepreneurial context, backed by the media, education and policies dictated by the government, will lead local entrepreneurship in the right direction (Lau).

Present in the current crisis situation within the European Union, the media reports do not portray an optimistic view of the future, further discouraging the entrepreneurial spirit. It then



becomes the responsibility of the government, through regulation and infrastructure, to facilitate start-ups and provide a learning environment in which to do so. The amount of hurdles and procedures blocking the establishment of SME's decreases the likelihood of people taking their great ideas and turning them into profits (Lau). In contrast, decreasing the amount of days in which it takes to start a business will increase confidence, thereby fostering entrepreneurship, ultimately creating a strong reinforcing loop.

SME's provide two out of every three jobs in the private sector and are responsible for contributing to more than half of the total value added created by businesses within the European Union. This represents more than 99% of all European businesses, promoting economic activity in addition to the creation of jobs (Facts and Figures). This local entrepreneurship creates jobs in both the business and manufacturing sectors, empowering the youth to potentially begin their own businesses as well. Thompson explains that these opportunities will in turn decrease the unemployment rate from their dangerous highs. This decrease will secure income for those in need, increasing the capacity to plan for the future coupled with a positive outlook. Without this psychological shift, the wellbeing of the generation will deteriorate, further leading to a decrease in GNH.

### 5.5. SME's, Growth & Inequality

It is important that the European Commission shows understanding in the importance of SMEs and their impact on wealth, economic growth, as well as their key role in innovation and research and development (Enterprise and Industry). This becomes evident in the fact that the share of people preferring self-employment over being an employee has dropped in almost all member states. The problem arises from disparities between taxes and regulations in member states concerning SMEs. Since each member state has its own unique SME sector, support remains

unbalanced, with a substantial number of EU Member States still neglecting to take into account the characteristics of small businesses, in particular micro-businesses, when designing legislation or not facilitating a second chance for honest bankrupt entrepreneurs (Entrepreneurship 2020 Action Plan). In a country such as Greece, there is a complex administrative and tax system that creates legal, bureaucratic and procedural disincentives to set up and expand businesses (Greece 10 Years Ahead 7). When government policy fosters local entrepreneurship, job creation is promoted, leading to a creation of value as well as sustainable growth which in turn increases the anti-fragility of the entire system on a national level. For those countries with these policies already in place, a movement of labour ensues. This increases inequality between countries as proven by headlines, “The business climate in France has also worsened. French firms are burdened by overly rigid labour- and product-market regulation, exceptionally high taxes and the euro zone’s heaviest social charges on payrolls. Not surprisingly, new companies are rare.” (The Time-bomb at the Heart of Europe). In contrast, Flanigan explains, Ireland’s tax policies and regulations are made to facilitate entrepreneurship, with enthusiastic entrepreneurs, who “seemingly rank just below rock stars in popularity”. Due to the unappealing atmosphere created, many aspiring entrepreneurs simply leave. There is an estimated 50,000 Germans in Silicon Valley in addition to 500 French startups in the San Francisco Bay area. The difference found is that of having the freedom to fail (Les Misérables). This further increases the inequalities between member states by strengthening the economy in some as it is weakened in others. This is a clear demonstration of the “success to the successful archetype”. These inequalities also impact public opinion of the population and create division between member states. This is exacerbated through political figures who do not work together to improve the EU as a whole, but instead profit from other countries’ bad decisions and encourage public opinion to believe

that they will be better off if other countries are doing badly. “U.K. Prime Minister David Cameron promised in June to roll out the “red carpet” for fleeing French people” after the 75% tax was imposed in France (Fouquet).

Real growth only occurs when several elements of a system are simultaneously creating conditions for an upgrade of the generic economic standing. Industry, services, innovation, consumption, and trade are the drivers. However, the economy evolves only if these elements operate in sync. If they don't, they will only create costs in the systems, because they don't necessarily represent the value creation on their own.

#### 5.6. Invisibility within the European Union members

“An imbalance between rich and poor is the oldest and most fatal ailment of all republics” (Plutarch). Ghosh claims that “inequality is the biggest threat to the world and needs to be tackled now”. She explains that in order to address inequalities between countries, economic diversification and improvements in productivity are necessary. Inequalities across countries create social stratification, which involves the classification of people into groups according to their socio-economic status, political, and ideological dimensions. Economic differences between countries generate hierarchy and polarization. It leads to the empowerment of some countries, such as Germany, over others, such as Greece, increasing discrimination and stereotypes.

Discrimination by age, also called ageism, is the most widely experienced form of discrimination in Europe, where 44% of the people perceived it as a ‘serious’ or ‘very serious’ problem (Evans). It leads to a lack of empowerment for young people and may affect their psychological wellbeing and life prospect. Stereotyping is also easily identified in the European Union, where the north is considered more efficient and the south is considered lazy and egotistic. Fisher states that “The

euro crisis [...] appears to be exacerbating long-held views about Germans and reinforcing general stereotypes among Europeans about each other”. This thought process increases the invisibility of these countries, where the financial performance is directly related to their culture (Pelagidis). Finland, for example, went through a serious recession at the end of the 1980’s due to deregulated financial services and it has recently been ranked as one of the most peaceful and economically competitive countries. Claiming that financial performance and culture are related would mean that Finland has changed its cultural characteristics over the past 20 years. In addition, workers in Greece work longer hours when compared to workers from Germany, which shows that there are underlying reasons why the economy in Greece is not doing well that are not related to laziness, but to productivity. The fact is that the current crisis has intensified even more the impression of “chaotic north-south cultural distance”, mainly because of the bailouts required by southern countries in order to preserve the Eurozone. This whole scenario impacts cultural diversity and resilience, and it is leading Europeans to lose faith in the idea of the unity, which negatively impacts GNH (Mackintosh).

### 5.7. Economical & Human aspect (GDP vs. GNH)

Gross Domestic Product (GDP) is most often used as a measure of the overall wealth of a country, but does not accurately depict the lives of individuals. “Economics evolved in a time where labor and capital were the most common limiting factor to production. Therefore, most economic production functions keep track only of these two factors (and sometimes technology). As the economy grows relative to the ecosystem, however, and the limiting factors shift [...], the traditional focus on only capital and labor becomes increasingly unhelpful” (Meadows, 102). GDP is defined as the market value of all the goods and products produced or provided within a country at a given moment in time (Friedman). Many aspects are omitted in calculating GDP,

such as real growth, which includes employment rates, inequalities within the country, depletion of natural resources, and the overall well-being of citizens. Due to its limitations, GDP should be interpreted only in the context of economic activity (Friedman). In addition, GDP is calculated on an annual basis, which creates delays and impact the behavior of a system. Meadows explains that “if a decision point in a system is responding to delayed information, or responding with a delay, the decision will be off target” (Meadows, 104). It indicates that GDP by itself might not be the best approach to measure a country’s performance. Taking other aspects of human life into consideration should be addressed through a hybrid of indicators. Incorporating GDP (only measured yearly) with Gross National Happiness offers a solution for such a dilemma, creating fast reaction times to severe problems such as unemployment.

Gross National Happiness (GNH) illustrates the importance of taking into account each and every member of society. The nine domains (psychological well-being, time use, community vitality, cultural diversity, ecological resilience, living standard, health, education, good governance) and 33 indicators become a set of guiding principles that navigate a path towards a sustainable and equitable society (Kelly). The GNH Index is meant to orient the people and the nations towards happiness, keeping in mind that people are diverse, in which case not all factors are universally required in order to lead a fulfilling and happy life.

GNH has successfully been implemented in the country of Bhutan, and though on a smaller scale, the domains can be applied worldwide, though the relative importance of each variable will differ depending on the values of society and the nation as a whole. From a systemic perspective, transformation will take place through individual, community, country and planetary levels. All of these levels must be addressed at the onset of the program in order to implement the program effectively (GNH Centre).

Maintaining a firm grasp on all nine domains is critical to implementing GNH effectively. Since each country and nation can implement GNH in many different ways, an overview will be provided of the basic elements composing each of the nine domains. It is essential to keep in mind that not all variables need to be present to be happy.

Psychological well being is an assessment of the contentment level of individuals when examining the realms of life satisfaction, emotional balance and spirituality. This variable is strictly intrinsic and strives to assess one's subjective views on a range of variables such as occupation, health and family (Ura). Health can be described as an absence of illness. Self-reported health status, healthy days, long term disability and mental health are the various aspects that take into account the health of each individual in society. Focusing on increasing working-age health leads to better physical and mental health, and will save money each year (Black). Education can be quantified by examining literacy, educational qualification, knowledge and values. Education at all ages plays an equally important role in sustaining economic, social and personal well-being (Desjardins, 11) by making each and every individual a more productive member of society and operating more effectively in the contemporary world." (Green Templeton College) Culture is rooted in language and cultural participation. Participation in cultural activities is instrumental in helping people and communities to overcome poverty and social exclusion (Employment & Social Affairs). It is necessary for departments and ministries responsible for both cultural and social policy to produce encouragement that increases participation of all groups in cultural activities and projects. Time use is the balance between paid work, unpaid work and leisure. (extensive analysis - Ura) It incorporates many of the activities carried out in the other domains. With unpaid work in both the home and communities not being taken into account using GDP, this domain allows for a deeper understanding and

evaluation of the variable. Good governance includes political participation, political freedom, service delivery and government performance. It also takes into account fundamental rights, freedom of speech and the right to be free of discrimination (Ura). Community Vitality is comprised of social support, community relationships and family. The capacity to thrive and change in the pursuit of individual and social well being, in ways that are inclusive and respectful of the needs and aspirations of diverse communities (YMCA Canada). This is the key to mobilizing people and resources in the pursuit of greater individual and collective happiness. Ecological diversity and resilience encompasses pollution, environmental responsibility, wildlife and urban issues. European policies aim to provide an environment in which the level of pollution does not give rise to harmful effects on human health and the environment protected (European Environment Agency). Finally, Living standards attempts to estimate the fulfillment of basic needs for comfortable living. Household income and assets as well as consumption can be measured. The variables used in the Bhutanese example such as livestock would need to be changed to better reflect the situations of each individual member of society in Europe.

## 6. Interventions

### 6.1. Objectives

The purpose of the interventions will be to create a positive impact not only on the countries facing political and social instability, but on the European Union as a whole. As a result to changes that can be made to the leverage points identified, the system would be more likely to evolve and become less susceptible to a future crisis.

## 6.2. Action Plan

The action plan is based on five main interventions and its possible consequences set as short, mid, and long-term goals.

### 6.2.1. Short-term goals

#### *6.2.1.1. Political Stability*

It has been identified that political instability can affect a system as a whole. For the countries that are at-risk within the EU to improve economically they first need to become politically stable. Carney affirms that “deep challenges persist in financial systems. Without sustained and significant reforms, a decade of stagnation threatens”. EU experts might help guide these at-risk nations by helping their individual governments implement political and economic reform according to each country’s specific needs. However, the countries at higher risk would have to be willing to create real change, one of the first steps being the digitizing of information. They may also consider fiscal policy strategies and reform of social security in nations to improve stability, as has shown successful in Chile (1981), then followed through Central America and through many central and eastern European countries through the past three decades (Kritzer).

It is possible to speed up crisis recovery in many nations through supportive regulations for corporations, entrepreneurs, and startups that will in turn stimulate growth, innovation, and competitiveness. This can be done by tax incentives and by facilitating the implementation and evolution of businesses through easing enterprise policies. In addition, the EU must be consistent with these policies in order to create a positive image through the media, and increase opportunities for investments. Decreasing political instability and the risk of default, in addition



to low cost of labor, low investment costs, and considerably high rates of return on investment, will likely attract investors.

#### *6.2.1.2. European Union more unified*

Political and economic instability is aggravated by the lack of communication and alignment between the Union members. It is important for the Union as a whole to keep its unity strong throughout the process of recovery. It is essential to find common interests and set common goals that will benefit all the Europeans and countries in which they live. Alignment between influential figures creates a sense of stability worldwide, which will in turn attract more investors to the European Union and help in the development of strong communities, the creation of jobs, as well as the creation of opportunities for growth and innovation.

#### *6.2.1.3. Incentives for SME's*

The localization of the market is important to strengthen the economy. The mobility of people between European countries is very important to create diversity and competitiveness. However, the lack of local opportunities might result in brain drain which slows down the development of certain regions and speeds up the development of others.

SME's increase local development and create opportunity for skilled labor in the community.

Creating incentives for implementation of SME's could decrease unemployment rates.

Moreover, it could empower people, mainly the youth who have been struggling to get jobs and who are actually the primary source of innovation and sophistication. Mr. Schulz, president of the European Parliament, affirmed that economic growth is the most effective way to combat youth unemployment. He said, "what we, the current generation of politicians, owe these young people are good ideas, courage and prompt action in order to generate growth at long last"

(Martin Schulz). In addition, SME's could help to attend specific needs that might be overlooked by larger companies. It would also improve infrastructure, which would also contribute to development of the community and to the well-being of the population.

“World Bank figures show that registrations of new limited companies (the commonest kind of start-up and a good indicator of entrepreneurial vim) were down by 12.1% in the EU in 2009”. Estonia is a great example of how start-up culture helps the economy during the financial crisis, when many countries still struggle to get out of it. As of 2011 more than 14,000 enterprises were registered, up by 40% from several years prior. They have promoted high tech industry and created opportunistic approaches for entrepreneurs and other SME's to flourish. “Low taxes, clean government, and a high level of technical education” were strategies used in order to create incentives for entrepreneurs and investors. The author suggests that Greece should be the next country to adopt this kind of incentives along with “intensive bootcamps” for potential entrepreneurs (Baltic Green Shoots).

#### *6.2.1.4. Growth strategy*

Look for growth opportunity according to the country's resources and needs in order to boost the economy and create opportunities not yet explored.

#### *6.2.1.5. Implement GNH as a complementary measure to GDP*

GNH is a more humanistic approach to evaluate a country's performance. GDP is an important parameter for comparison of economies on a world level; however, it does not take into account economic inequalities, which are always very significant within a country. GNH takes into account the well-being of the population, the community vitality, and people's living standards. “It is not about how well-endowed a country is; rather it is about how productively it

can best use these endowments to improve standard of living continuously” (Esposito). In addition, GNH would be a good parameter to control environmental impacts caused by expansion of industry and SME’s. Another benefit of adopting GNH as a complementary parameter is that it can be measured on a monthly basis, whereas GDP is measured on a yearly basis. Therefore, it could decrease delays in the decision making process and create more accurate actions. For example, if the unemployment rate constantly increases a few months in a row, the government will be able to more quickly identify possible problems and respond to the system before it becomes too hard to be controlled. Mr Lumina explains that, "development cannot be sustainable if human rights are not sufficiently taken into account. Ensuring the full participation of all segments of society in decision-making processes, enhancing efforts to reduce inequality, and respecting, promoting and protecting all human rights are critical to sustainable development.” The implementation of GNH as a complementary measure to GDP would only benefit the Europeans and the Union

### 6.2.2. Mid-term goals

#### *6.2.2.1. Installation of multinational companies/Industry*

The conditions created in the first stage would create a stable environment in which investors would be attracted to. Part of these international investments would be directed to the installation of industry and service companies that would positively impact the local, the country’s, and the Union’s growth and influence.

Multinational corporations increase diversity, which may reinforce local economic change in demand and market expansion to meet changes, creating an environment in which communities become more adaptive and culturally resilient. It will also reflect in training for local skilled labor, in more collaboration within and between countries and companies, in

sharing of information technology, and in an increase of technology access. In addition, sharing of knowledge and training increase people's uniqueness, which reinforces their value, self worth, and empowerment. Research and development is crucial for economic growth and competitiveness. It increases the sophistication of products and the processes, that might eventually become innovation and contribute to real creation of value. Multi-national companies can also contribute to the local communities' development through investments in infrastructure and social programs that help the community to evolve.

With a new set of skills and uniqueness, people's wages increase. It leads to increases in consumption and access to basic needs, such as education and health care, which will improve the overall standards of living within communities. It would increase the ability to plan for the future, for example, the ability to buy a house, to travel, to invest, and even to have children, who will populate schools, maintain jobs for teachers, and eventually become taxpayers. All of these will somehow contribute to economic growth and social development.

#### *6.2.2.2. Startups and Innovation*

New technologies, increase in local skilled labor, and adaptation to rapidly changing environments boost creativity and might generate new insights and ideas that would influence workers interest in startups. It would contribute to an increase in SME's and strongly contribute to innovation, creation of value, uniqueness, and local growth and development.

#### *6.2.3. Long-term goals*

##### *6.2.3.1. Economy evolves*

Countries expand their markets (supply and demand), industry, and services. Innovative and sophisticated products and processes, and saturation of local market would create opportunities

for exportation, which would decrease the need for importation and the dependency on other countries. It would create a more anti-fragile system, where the countries are able to produce their own goods and contribute their own development. Increase in industry and SME's would positively impact global competitiveness (Tallinn). The increase in SME's would increase the opportunity for innovation, which often offers attractive returns to capital invested, resulting in more capital flowing into the country, which increases economic activity, and reinforces growth. Political stability, alignment, and shared vision along with increased collaboration within the EU members, would lead to a decrease in discrimination, stereotyping, and therefore invisibility. It would positively impact people's lives and the sense of belonging to the European Union. Development of weaker economies would decrease brain drain and inequality between countries, and an increase in SME's would decrease inequalities within the countries.

Using GNH as a complementary parameter to measure a country's performance would allow the governments to evaluate the improvements of inequality overtime, and control the negative impacts of economic growth on the environment, making sure that the well-being of the population would be taken into account. It would create prosperity for people, communities, nations, and Union as a whole.

## 7. Conclusion

The nature of what is known to be the "European Crisis" was analyzed above through the eyes of a Systems Thinker. Contrary to depending on linear causalities, this method helped us see the systemic patterns of behavior in this interdependent and complex system. The failures in the system have not only led to economic earthquakes but have also severely disturbed millions of lives. The "European Union" system, which strives for unity, has been damaged. The crisis has

been aggravated by the grief, the increasing inequalities, and ultimately by the lack of solidarity and faith in the idea of “Europe as a Union”.

There have been many actions taken to solve the crisis and many have not only fallen short, but have arguably worsened the situation. In this study, after understanding the system and identifying the areas where failures had initiated, we proposed some structural and moral interventions that are not focusing on quick fixes, but rather on meaningful integrations to make the system sustainable. Since the system’s sole purpose of existence is the people within it, the interventions proposed are keeping the people in the forefront.

The leaders should go beyond silo mentality because it causes a lack of communication and hampers the efficiency of effective decision making. There should be a shared vision in each country and within the union to promote alignment in goals. The myopia caused by bounded rationality forces people to think locally, which produces seemingly better results in the short term, however prevents a focus on the long term. Hence, more efforts should be made to see the big picture, in order to produce sustainable solutions for the Union.

The welfare of Europe depends on the competitiveness of companies and the nations. Therefore, innovation and skills of the young talent should be combined. Instead of only bailing out weaker countries every time they fall, each country should be empowered by focusing on their own uniqueness as well. This would be possible by creating jobs and opportunities locally and by increasing productivity. Facilitating the business start-ups and encouraging SMEs would create substantial returns in terms of employment and strength of the economy. Together with political stability from shared vision, more and more investments would be attracted to the weaker countries. Thus, continuous reinforcement of the growth becomes inevitable.

The growth cannot be focused simply on numbers in financial statements coupled with less debt, but should be focused on the prosperity of the people within this complex system. GDP alone does not reflect the real quality of life. For that reason, GNH should complement GDP to make way for a more accurate measurement of the real growth.

Economic strength does not make the entire system strong, but making the system more anti-fragile where it learns from the shocks and recovers does. All of the proposed interventions are aiming to make the European Union more anti-fragile and thus resilient when it is shocked or threatened. The only way to be a strong country is to be a part of a stronger European Union. As Donella Meadows stresses in "Thinking in Systems", your success depends on the success of your neighbor. By implementing these 3 stages of interventions, alignment and shared vision throughout Europe could be assured. A stronger Union can emerge slowly and confidently. More than 500 million European's lives could improve. This stronger Union would prosper together with every country that is a part of it. As Aristotle emphasized, "the whole is greater than the sum of its parts".

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