

The Need for Emergency Economic Policy Options to Mitigate the Economic Impacts of Epidemics: Ebola in West Africa and MERS in South Korea

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Abstract

Epidemics are ever more common due to globalization and climate change. Epidemics are not standardized; thus, creative policy that fits the unique needs of those hardest hit must be designed and implemented according to the situation. This paper summarizes the need for policy options that can be used to counteract and mitigate the negative economic effects of epidemics. Furthermore, this research scrutinizes two recent epidemics: Ebola in West Africa and MERS in South Korea. Based upon the two cases, policy options are recommended to mitigate the most serious economic impacts. International policies regarding trade, investment and employment are all recommended based upon a review of literature and the two cases; moreover, short-term and long-term economic policy are delineated and recommended. In conclusion, this study offers a review of the narrow stream of literature that is produced for reducing the economic impacts of epidemics; and recommends that further research be conducted in this area based upon the increasing demand for policy options regarding epidemics.

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1. INTRODUCTION

The media in recent years has been awash with news of emerging diseases, epidemics and pandemics including, Influenza, MERS, Ebola Virus Disease, and Zika Virus Disease among many other infectious diseases. The impacts of epidemics and pandemics to the global economy are set to increase because of globalization (Pike et al., 2014). The need to understand the impacts and to set policies to mitigate the impacts is of primary importance (Pike et al., 2014 & Busch et al., 2015). Policy should not be limited to healthcare; however, it must include economic policy.

Research on healthcare, epidemiology, and other areas of scientific importance related to the West African Ebola epidemic are abundant; yet, there is limited research on the economic impacts of the epidemic (Elshabrawy et al., 2015 & Maconachie et al., 2015). Understanding the economics of an epidemic can lead to future policy that can mitigate some of the negative economic impacts; in the case of SARS the economic impact far outweighed the infectious disease itself (Lee et al., 2003). More research is necessary to discover what policies stop transmission during an epidemic, and what policies impede containment (Hodge et al., 2015). A priority area for economic policy during an epidemic is securing socioeconomic factors such as food security and livelihoods to reduce the impact of the epidemic; this was especially true for the West African Ebola outbreak where the economy was unstable (Busch, et al., 2015).

This paper looks at the economic impacts of the West African Ebola outbreak and the South Korean MERS outbreak to recommend future international trade policies that could be utilized to mitigate the economic impacts of future epidemics. Contrary to one's gut reaction, it is generally recommended that international trade between epidemic countries should NOT be stopped, but preserved; the Harvard-LSHTM Independent Panel on the Global Response to Ebola recommends that trade and logistics operators be preserved in order to maintain ordinary economic operations, but it does not give any specific advice on how this is to be accomplished (Moon et al., 2016 & Busch et al., 2015). This study looks into trade policies that can be used to ensure trade and logistics are maintained during an epidemic in order to mitigate the economic impacts, and contain an epidemic. Furthermore, many options are suggested to ensure impacts are mitigated in the in the short-term and a quicker recovery is facilitated in long-term.

This article is organized into multiple chapters: chapter one provided an introduction to this paper, chapter two reports on and scrutinizes two recent epidemics, chapter three provides a summary of literature as it pertains to this area of research, chapter four offers

recommendations regarding economic policy and epidemics, finally chapter five concludes the article with recommendations for future research direction.

2. CASES OF EPIDEMICS

Two recent and contrasting cases were chosen for this research. The two cases are remarkably divergent, and highlight the importance of the circumstances surrounding an epidemic and the impacts of an epidemic. The two cases required different responses from national and international institutions. In the case of Ebola in West Africa an international response was required to both contain the virus and mitigate the economic impacts, while in the case of MERS in South Korea, a domestic response to contain and manage the economic impacts of the outbreak were sufficient. Not all epidemics are the same, requiring a careful analysis of the circumstances and impacts surrounding the epidemic before policy should be applied. A careful review of the scenario should guide policy makers to the most appropriate decision-making. These cases highlight the importance of the situation, the impacts and the ability of the nation to manage its own response.

2.1. The Case of Ebola in West Africa

Ebola was first discovered to be spreading rampantly through the West African nation of Guinea with suspected cases in neighboring Liberia and Sierra Leone on March 25, 2014 (CDC). Epidemiologists later determined that a young boy in a very remote part of the country was the first person infected with Ebola. The child was infected in December of 2013, and spread the disease to family members. The spread of the virus was relatively slow at first. Medical professionals knew in January that an unknown disease was spreading, and killing people rapidly, but they could not pinpoint the cause. Because Ebola Virus had never been discovered in West Africa, it was not suspected. More than three months after the initial case, medical professionals from NGOs and the government determined that Ebola Virus Disease was spreading rampantly throughout the West African country. By the time Ebola was discovered, the situation had escalated out of control for local health officials (CDC).

Previous cases of Ebola were discovered and isolated in very remote areas of Africa before the disease was able to spread to more populated areas including cities; West Africa is a more densely populated area of the world than many of the other areas where Ebola had been discovered, so this complicated the containment of the disease from the beginning (CDC). It was clear that this was not going to be the average Ebola outbreak. International organizations rushed to contain the epidemic, but resources and assistance was sluggish, and the response of global organizations was even slower (Gostin, 2015).

Local people did not believe the claims of foreign NGOs that Ebola was spreading throughout the region; there was violent opposition towards government and foreign aid operations alike (Reuters, a). Sierra Leone decided to stop trade and the movement of people across the borders of Liberia and Guinea on June 11, 2014 in an effort to stop the spread of Ebola (Reuters, b). On July 27, 2014 Liberia closed its borders with Sierra Leone and Guinea (BBC, 2014). Neighboring countries also made several efforts to slow traffic between their borders despite a lack of evidence that such a policy could prevent the spread of the disease; moreover, it is certain that the closure of borders exacerbated the economic impacts of the epidemic for the region (Moon et al., 2016). According to Mullen (2015), the impacts of Ebola are widespread in West Africa from a dramatic decline in the quality of healthcare in the region, to reduced agricultural production. Perhaps, the most devastating aspect was in the decreased ability of already poor healthcare systems to cope with serious endemic diseases such as malaria; there was a 45% increase in malaria cases in Guinea, 88% increase in Sierra Leone and 140% increase in Liberia; all adding to a total of 10,000 additional deaths for 2014, nearly equivalent to the more than 11,000 victims of Ebola (Mullen, 2015).

The impacts of Ebola were felt throughout the region; tourism and investment within the region were down; foreign companies repatriated employees to protect them from the situation (World Bank, 2014). The region was struggling economically from the effects of the

epidemic even if millions of dollars worth of medical aid was flowing in to stop the epidemic; more could have been done to mitigate the economic impacts of Ebola in West Africa.

2.2. The Case of MERS in South Korea

On May 26, 2015 it was announced that MERS had been spreading throughout healthcare facilities in South Korea. A single man brought the illness back from the Middle East. After feeling sick, he sought treatment at multiple healthcare facilities, and poor management of quarantine measures in the emergency rooms of each facility resulted in the rapid spread of the virus throughout many additional healthcare facilities in South Korea (WHO, 2015a, 2015b). Fortunately, the disease failed to spread beyond hospitals; yet, South Korean officials were criticized for a slow response to the crisis (WHO, 2015a). At the peak of the outbreak more than 2,200 schools were closed, and more than 17,000 people were quarantined (WHO, 2015a, 2015b). There were a total of 186 cases with 36 deaths (WHO, 2015b). The impact of the disease itself paled in comparison to the economic impacts of the disease. By July it was estimated that tourism in the country was down by 40% from the previous year; coupled with slow global economic growth and the MERS Outbreak, South Korea was looking at the lowest economic growth rate since the Asian Financial Crisis (BBC, 2015).

2.3. Comparison of the Two Epidemics

The MERS Outbreak in South Korea in 2015 was a radically different situation from Ebola in West Africa. The MERS Outbreak in South Korea was confined to healthcare settings; furthermore, the disease was not found to be spreading among ordinary citizens; thus, the disease was not as devastating to people. MERS in South Korea resulted in 186 cases and 36 deaths while Ebola in West Africa resulted in more than 28,000 cases, and more than 11,000 deaths (Mullen, 2015).

Although the two cases are remarkably different, there is merit in comparing the economic outcomes, and the policy reactions; moreover, the policy responses to any outbreak should fit the situation. Economists cannot expect that any real-life epidemic situation will unfold in exactly the same manner. Considering the diversity of the global economy, it is likely that no outbreak will closely resemble another; despite this fact, some general economic policies can be developed, and recommended by comparing real-world events.

In both cases officials were criticized for a slow response to the epidemic (Gostin, 2015 & WHO). The WHO was criticized for not declaring an emergency earlier in West Africa, and not securing international aid earlier (Gostin, 2015). Indeed it is likely that the slow response resulted in a more devastating course for Ebola in West Africa. Lessons must be learned in order to prevent future tragedies. South Korea's initial lax response to MERS likely also resulted in more cases and deaths. A slow economic response may not likely result in more deaths, but certainly has implications, especially when the country is developing. Any response or reaction to an epidemic must be as quick as possible if it is to be effective. A quicker response time will no doubt reduce the devastation caused by any epidemic. The speed of the response must be a priority to any policy or plan of action towards any epidemic.

South Korea is a modern economy diversified in manufacturing, services, and agriculture. South Korea was able to handle the situation without any major international intervention. Economic losses in South Korea were largely due to losses in tourism; although, there were major losses in retailing and a general slowdown of the whole economy, likely because of Korea's dependence on the global economy, which was not doing well at the time. It is impossible to unwind general statistics to determine the true causes of Korea's economic losses in 2015; but the responses to the crisis involved a number of policies geared towards the economy and the health crisis: (1) ensure confidence in public health system, (2) increase money supply to stimulate the economy, (3) offer special assistance to hospitals and companies impacted by the disease. Because South Korea is a developed economy, there was no doubt about their ability to implement such policies. When a country can manage an internal crisis it is reasonable for the international community to take a step back and allow

the country to handle the crisis alone. Korea was not in need of serious international economic intervention.

It is important to distinguish between countries and regions that need international economic intervention and those that do not because economic policy that is inappropriately used will diminish the acceptance of such policies among policy makers. Economic trade policy is frequently politicized. If emergency economic trade policy is abused it will likely be abandoned in the future because of controversy. Emergency economic trade policy should be used in cases where the country or region is truly in need of economic assistance, not just an economic boost.

The West African countries of Guinea, Liberia and Sierra Leone were remarkably different from South Korea. The economies of the three countries were made up of mostly small farms, small mining operations, small manufacturing operations and services with minimal international investments (World Bank, 2014). These countries were not characterized by economic development or economic stability; moreover, the region had a history of political and economic instability. It was perhaps one of the most unprepared places in the world for an epidemic. For the world to take a step back from this region, and not get involved in the fight would be a moral hazard! Much was done internationally to tackle the West African Ebola outbreak, but more could have been done to ensure economic stability, and to encourage continued international investment in the region despite the ongoing epidemic at the time (Gostin, 2015).

The West African Ebola epidemic was much more devastating for the people of the region and the economy. The West African countries did not have the ability to manage the crisis alone. International intervention was crucial for containing the disease. Most of the effort focused on the disease itself with little attention to the economic impacts of the epidemic. Border closings, trade restrictions, expatriate reclamations, and neglect of the economic impacts led to more hardships and likely a longer recovery time for the economy of the region. The primary focus during an epidemic should always be lives, but the economy is usually central to livelihoods in a developing country and should also be carefully considered. Economic policies that could have been used to improve the economic situation are discussed in chapters three and four.

Table I. Case Summary

	Ebola in West Africa	MERS in South Korea
<i>Disease</i>	Ebola is a very devastating disease that was well known; this affected the psyche of foreign businesses & neighboring countries; the case fatality rate is between 50% and 90%.	MERS was not a well-known disease until after the outbreak in South Korea; media sensationalized the disease; the case fatality rate is between 35% and 40% but was only 19% in the Korean outbreak.
<i>Reach of the Disease</i>	Ebola was widespread throughout the three West African countries, and sporadic in a few neighboring countries.	MERS was mostly confined to healthcare settings.
<i>Disease Impact</i>	More than 11,000 people died and more than 28,000 people were infected; many survivors have long-term disabilities and stigmatization.	Within the South Korean healthcare facilities 186 people were infected and 36 people died.

<i>Economic Impact</i>	Livelihoods were threatened; food supply was threatened; all industries were impacted; healthcare was most seriously damaged.	Healthcare facilities impacted; tourism was the most affected industry; other industries were affected.
<i>Private Sector Response</i>	Flight of foreign investment; closing of businesses; major losses in agriculture.	Tourists postponed or cancelled their travel plans to Korea; decreased spending in retail.
<i>Government Response</i>	Extremely Slow; the focus of the government was a cooperative effort with aid organizations to contain the outbreak.	Moderately slow; cooperated with the healthcare facilities affected; quarantined individuals suspected of carrying MERS; enacted economic relief for businesses negatively impacted by MERS.
<i>Special Comments</i>	Containment of Ebola required an international effort that could not have been achieved by the three countries affected; international aid was crucial.	MERS was economically disrupting to South Korea mostly because of tourism losses, nevertheless, the Korean government was able to contain MERS without international help.

3. LITERATURE REVIEW: INTERNATIONAL POLICY OPTIONS

Establishing international trade policies that can be employed during an epidemic crisis situation such as a WHO declared international medical emergency could be immensely valuable to stopping the spread of a disease, and mitigating the economic impacts. Containing epidemics is a global health priority that requires a multifaceted approach that utilizes policy from many areas of a government's arsenal of policy (Heymann et al., 2015 & Castillo-Chavez et al., 2015). Ending an epidemic requires an international collaboration of resources, policy and decision making among other efforts (Heymann et al., 2015). Knowing how to collaborate on policy, share resources, and make decisions requires research that connects leaders with information; research must be able to provide up-to-date information for decision making (Knight et al., 2016). Allocating resources and properly managing the flow of those resources is an important part of managing an epidemic (Matua et al., 2015). Creating specific international trade policies for emergencies can help ensure the proper flow of resources during an epidemic. The economic impacts of epidemics are frequently felt long after the pathogen is contained, up to five years later for SARS (Lee et al., 2003). Providing a short-term and long-term trade policy can also ensure the long-term economic effects of the epidemic are mitigated.

Epidemics do not follow a common blue print from beginning to containment. Epidemics are exceptionally divergent from the context surrounding the epidemic to the economic impacts affecting countries. Any policy utilized should likely be dynamic, innovative and creative in order to meet the unique economic challenges that are posed by any epidemic. This paper outlines various policy options that are creative, unique, and innovative in their means to both achieve the basic goals listed below and to react to the unique circumstances that create economic hardships during an epidemic. Considering that an epidemic situation is not an orthodox scenario there cannot be an orthodox solution.

Accordingly, economic policy that is designed to mitigate economic damage and facilitate recovery during and after an epidemic must at a minimum: (1) help to contain the disease, (2) coincide with international development goals, (3) be quick, (4) be responsive to local economic needs, (5) ensure livelihoods are maintained and (6) consider the short-term and long-term dynamics of containment and recovery. Chapter four follows this framework of minimum requirements to discuss possible policy options for achieving each of these goals.

4. RECOMMENDATIONS

4.1. Short-term

Short-term policy designed to assist in the short-term should ensure that basic essentials are available, that livelihoods are not lost, and that companies do not lose their competitive positions locally or globally. Policy in the short-term should try to alleviate as much economic burden as possible on the residents of the affected region. In developing countries, economic burden is frequently equivalent to malnutrition, no access to vital needs, or worse. Such policies in a developing country could be critical to saving lives, not only jobs and economic output.

In order to ensure that essential supplies are available, the affected country's economy should remain as open as possible. Additionally, employers should be granted opportunities to claim benefits by continuing to pay their employees despite economic hardships that companies might be facing; that will ensure that livelihoods are not lost both in the short-term and in the long-term; moreover, it will allow local companies to not lose their competitive positions. International companies should also be given special claims in order to encourage them to maintain an expatriate presence, which is frequently critical to a lesser developed country's operations. Both domestic and international companies should be given special opportunities to make claims in order to prevent a loss of competitiveness, but more importantly a loss of livelihoods for their employees. The short-run must also be marked by a rapid deployment of special claims, economic openness and the relaxing of trade barriers and the opening of closed borders that could further harm the country's economy.

4.1.1. Open Borders and Trade

Open Borders: During epidemics there is an immediate concern by neighboring countries that the disease could spread via economic channels. During the West African Ebola epidemic many neighboring countries closed their borders to trade with affected countries. This created an undue hardship on the affected countries, and made it more likely that essential supplies and livelihoods would be severely disrupted by the epidemic (Moon et al., 2016 & Busch et al., 2015). In order to prevent undue hardship on affected countries, it is especially important that most neighboring countries remain open economically to the affected country; moreover, it is likely that their most important trading partner is their neighbor, as was the case for the West African Ebola outbreak. Trade must remain open in order to maintain the movement of essential goods and the livelihoods of those in the affected country.

Open Trade: Developed economies (OECD countries) could offer temporary beneficial trade conditions for affected countries to stimulate the economy of the affected countries; this would be especially prudent for developing economies where economic conditions are most dire during an epidemic. Since short-term trade barrier reprieves of only a few months are unlikely to be beneficial, longer-term trade barrier reprieves of at least five years should be employed with the option to remain open permanently at the end of the term. Based on economic data from SARS, Hong Kong took five years to recover from SARS (Lee, 2003). Lesser developed economies could take more time to recover.

A review of trade data could quickly reveal which sectors could benefit most from additional trade openness with developed nations. Such temporary trade decisions should be managed by the developed countries themselves. The most beneficial trade openness measure would likely be offered by neighboring countries, but they are also likely lesser developed countries. Encouraging lesser developed economies to modify trade barriers could harm their

development goals and burgeoning industries. During the West African Ebola outbreak, all the most important trading partners were neighboring developing countries. A careful review of the economic consequences and benefits should be made before any trade measure is changed; developed countries likely have less to lose than developing countries; unfortunately, they may have less to offer in terms of trade benefits.

It is important to have rapid changes to improve the situation as quickly as possible. According to the cases above, the management of both outbreaks was heavily criticized for a slow response. The best measure would be to have executive powers ready for such a scenario that could be deployed as soon as an epidemic is discovered.

4.1.2. Special Employment Claims for Domestic Companies and the Self-Employed

Domestic companies: Domestic companies are usually hit hardest by epidemics. They do not have overreaching resources that MNCs have to spread their losses over many markets and many operations. Employees are usually the first to be sacrificed during economic hardship. A well-developed economy such as South Korea had resources that could be deployed (economic stimulus packages) in order to help domestic companies during the MERS Outbreak. This is an important distinction between a developed country's response and a lesser developed economy's response; moreover, resources frequently cannot be made available by lesser developed countries.

In order to make resources available, an international aid organization such as the World Bank, UNICEF, WHO or the like could be given the task of ensuring a rapid deployment of small business claims especially for the purpose of maintaining the temporary employment of current employees in order to prevent the loss of livelihoods for employees despite a likely downturn in the domestic economy. Checks must be in place to ensure that the money goes to the employees and not the pockets of corrupt business owners.

There is a twofold benefit to providing wages for employees during an epidemic. The company benefits; when employees are let go, this is a loss for the company because they will need time to hire and train new employees when the economy recovers. If they did not lose their current employees, they will be able to recover quicker with less turnover costs. For the employees there is an obvious benefit; they are able to provide for themselves and their families.

Self-employed: In many developed economies people are self-employed. They are providing for their families through some means other than traditional employment whether that is selling produce in a traditional street market or working as a farm hand. These people are more likely to suffer than others. It is difficult to measure their lost income and make special claims for that. A temporary basic salary could be offered to those that are self-employed for the duration of the epidemic and its subsequent recovery. This would alleviate the economic suffering of many and ensure a rapid recover for the economy as well. An international aid agency should manage the rapid dispersal of such special claims, and once more, special checks would need to be in place to ensure that corruption did not ensue.

4.1.3. Special Claims for Foreign Companies

Special claims for foreign SMEs and MNCs should also be made available to maintain current employment rates throughout the epidemic. This could be offered by an aid agency or by the foreign company's home country. If the home company is from an OECD country the claim could be made to the home country; otherwise, the claims could be sent to a pre-specified aid agency.

Many developing countries rely on foreign companies because they offer significant employment opportunities. If they retract from the affected country during an epidemic, many livelihoods could be lost at once; therefore, destabilizing the country. Many foreign companies left or retracted workers from the affected area during the West African Ebola Outbreak. If incentives were offered to the foreign companies they may have made different decisions regarding their presence in West Africa.

4.2. Long-term

4.2.1. Special Benefits for FDI

FDI is frequently an important element to developing economies; when that is interrupted, it can be devastating to economic growth. Policy must be in place to ensure FDI is not disrupted during an epidemic. Based on the diversification of FDI it is important to review a single country's current FDI scenario before making any changes. Nevertheless, it would be reasonable to have the home country offer incentives to companies that invest in the affected areas during a specific period of time. The incentives could include tax breaks by the home country, special insurance to protect from losses incurred because of the epidemic, or even a scheme of government matching capital investments within the area. During the West African Ebola Outbreak FDI from many sources was put on hold. This likely slowed economic recovery even after Ebola was stopped. Any plan to maintain and encourage FDI during and after the epidemic will improve economic recovery.

4.2.2. Recovery and Normalization

Many epidemics subside or are contained within a short period of time; but there are long-term consequences, and there is a process of economic recovery that occurs overtime. It is difficult to measure the full extent of the damage that affects an economy after an epidemic. In the case of Ebola and West Africa, many lives were lost, many children were orphaned, the weak health infrastructure was devastated (from a human capital stand point, doctors and nurses), and many more survivors were left with debilitating and chronic illnesses. The economic toll is nearly impossible to measure; nevertheless, economies do recover and move forward. It is not reasonable to keep many of the policy provisions permanent. Countries must eventually normalize policies and a timeframe for that normalization should be considered. Certainly it is necessary to maintain the provisions throughout the epidemic; however, scaling back and termination of policy provisions should not inhibit economic recovery. Researchers will need to carefully examine the progress of the recovery then make decisions regarding scaling back and the normalization of all the policy provisions for the affected countries.

5. CONCLUSION

Epidemics will increasingly burden countries in the 21st Century because of globalization and climate change. The challenges of a single epidemic are unique and unpredictable. Economic policy must be flexible enough to adapt to any evident hardships that a country is facing. This study outlines some of the challenges to prescribing economic policy for nations struggling with epidemics, and offers several creative policy options that can mitigate some of the most imminent economic impacts of an epidemic. Considering each epidemic is likely to unfold idiosyncratically, policy must be creative in order to meet the unique needs of those affected; this research highlights that actuality and endeavors to offer solutions regarding some of those distinctive challenges.

This research is not complete in its analysis of cases of epidemics; only two divergent and acute cases were reviewed for this study. Moreover, this paper does not consider pandemics which include diseases that spread globally. Most of the economic concern for this research was focused on the immediate impacts of acute epidemics. Chronic diseases such as AIDS and tuberculosis are economically relevant epidemics that have been spreading throughout the world with severe consequences in many countries. Chronic diseases are likely more devastating but do not catch the same immediate attention as diseases such as Ebola and

MERS. Chronic diseases frequently do not result in reactionary behavior from business persons and policy makers. Research regarding chronic epidemics is likely more important than research regarding acute epidemics because the affects would be longer-term and more challenging to identify.

Future research in this area must consider chronic diseases as well as acute diseases; there are likely some similarities and difference that could be meaningful. Additionally, epidemics must be studied and managed from a multidisciplinary perspective in order to provide a more holistic understanding of the impacts. It is likely that there are many unknown aspects of epidemics that are related to economics and other disciplines. Future research should include additional methodologies in order to discover new information and new solutions. Ultimately this research is a starting point for offering solutions to the economic impacts of epidemics.

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