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Assessing the Nexus between Food Security and Social Unrest:

An Empirical Case Study on Indonesia during the World Food Crisis 2008

by

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ABSTRACT

Large peaks in global food prices in late 2007 and 2008 coincided with an unprecedented number of protests and riots around the world. Throughout history, riots appear to have frequently broken out as a consequence of food insecurity. Therefore, social unrest in 2008 was often explained with the rise in global food prices. Protests and riots in Indonesia during the world food crisis have been presented as anecdotal evidence to support the neo-Malthusian nexus between food insecurity and conflict. This paper examines if food insecurity precipitated social unrest in Indonesia during the 2008 world food crisis. Reconstruction of the events in Indonesia in 2008, and analysis of quantitative economic and social data reveals that social unrest can be best explained by the theory of relative deprivation.

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CHAPTER ONE: Introduction

Towards the end of 2007 and continuing into 2008, global food prices peaked at record levels. Not only the high level of the food prices was unprecedented, but also the rapid rise was extraordinary: between January 2007 and March 2008, global food prices increased by 51 % (Bellemare, 2011, p. 2). This price development not only increased the number of people living in conditions of food insecurity by up to 130 million, but according to prominent scholars it also led to social unrest around the world (e.g. Arezki & Brückner, 2011; Baker J. L., 2008; Bellemare, 2011; Brinkman & Hendrix, 2011; Bush, 2010; Lagi, Bertrand, & Bar-Yam, 2011; Schneider, 2008; Patel & McMichael, 2009). High food prices in specific, and food insecurity in general, are thus both threats to state security and political stability, as well as threats to human security. Yet, little empirical evidence exists on the nexus between food insecurity and social conflict. This paper constitutes an attempt to close this gap by focusing on a selected country – Indonesia – as well as a specific event – the 2008 world food crisis.

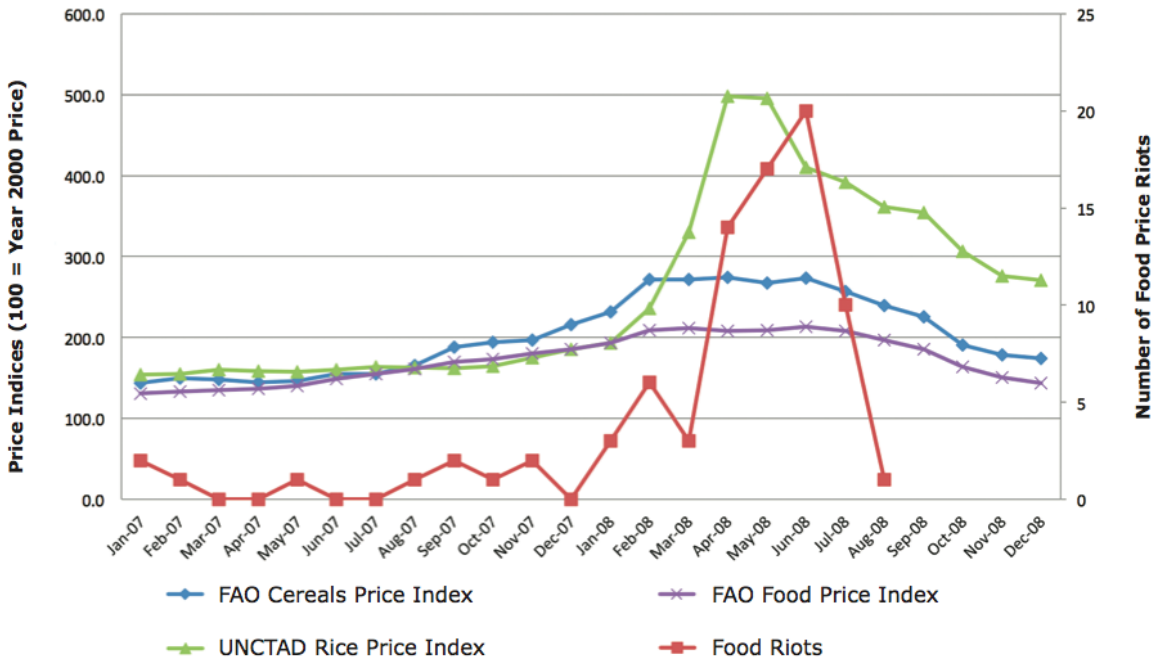

Figure 1: Food prices and rioting; Source: Brinkman & Hendrix, 2011, p. 7;

Numerous arguments have been proposed to explain the causes of the 2008 food crisis, including *inter alia* financial speculation, depreciation of the US dollar, low interest rates, reductions in grain stocks, biofuel policies and trade integration (e.g. Heady, 2010; Heady & Fan, 2008; Kharas, 2011; Timmer, 2010a). And numerous studies were conducted to assess the impact of rising global food prices (e.g Compton, Wiggins, & Keats, 2010; Institute of Development Studies, UK, 2009). Several studies suggested that high global food prices constituted the most important single factor in explaining food riots around the world (Schneider, 2008). A seminal study even argued that high food prices – and thus food insecurity – are a precipitating condition for social unrest (Lagi et al., 2011). Historical examples lend support to this thesis (e.g. Tilly, 1971; Taylor, 1996; Walton & Seddon, 1994).

Indonesia is often included in the list of countries in which food insecurity apparently led to riots (Schneider, 2008; von Grebmer, Fritschel, Nestorova, Olofinbiyi, Pandya-Lorch, & Yohannes, 2008). However, to date no detailed case study has examined if, and to what extent, social unrest took place, and the causes and triggers of social unrest.

Objectives

Civilization – goes an old maxim – is always only four meals away from barbarism: once the food supplies stop, so does law and order. The overall objective of this research is hence to contribute to the discussion about the nexus between food insecurity and social unrest. Using Indonesia as a single case study, this paper examines if food insecurity or relative deprivation precipitated social unrest during the 2008 world food crisis. The research thus aims to determine and systematize the relative importance of both food insecurity and unfulfilled value expectations relation to social unrest.

Limitations

Due to the complex nature of social unrest and social movements, no comprehensive examination of all potential causal variables contributing to riots and

protests in Indonesia in 2008 can be presented. Further cross-country comparative research and empirical single case studies are needed in order to fully understand the relationship between food insecurity and social unrest.

Furthermore, this paper resorted to quantitative macroeconomic data to measure the level of food insecurity. National data and aggregate figures by nature simplify context and obscure the very real differences that exist between regions and between different socio-economic groups, and between local communities, households, and even people within the same household. As economist Christopher B. Barrett (2010) from Cornell University stated: "*Food security measures based on household and individual data routinely generate higher estimates of food insecurity than those derived from more aggregate data*" (p. 826). Nonetheless, quantitative macroeconomic data provide reliable, comparable and easily available indicators for the overall degree of food (in-)security within a given entity.

Thesis Statement

This paper argues that social unrest in Indonesia in 2008 occurred not due to food insecurity but because of relative deprivation. It contends that food insecurity was kept under control by the Indonesian government due to social programs and policies aiming at self-sufficiency.

The paper therefore argues that the nexus between assumed food insecurity and social unrest has been exaggerated by macro studies. Authors who asserted a strong correlation between high food prices in 2008 and global social unrest failed to provide micro-foundation for their hypothesis. Due to this lack of micro-foundation they overlooked the country specific contexts and thus overestimated the impact the world food crisis had on individual countries such as Indonesia.

The assertion of this paper is that the theory of relative deprivation provides a better account for understanding social unrest than the neo-Malthusian nexus between food

insecurity and protests and demonstration. This paper argues that people take to the streets not when they are food insecure, but when they perceive a discrepancy between value expectations and the environment's value capabilities behind the background of improved living conditions (an in-depth discussion of the theoretical framework is provided in a separate section).

Definition of Key Terms

Food security: According to the World Food Summit 1996 in Rome, "*food security exists when all people, at all times, have physical and economic access to sufficient safe and nutritious food that meets their dietary needs and food preferences for an active and healthy life*" (EC - FAO Food Security Programme). From this definition, four dimensions of food security can be identified: availability, access, utilization and stability. For food security to be realized, all four dimensions must be fulfilled at the same time. Food insecurity as the antipode to food security exists when one or more of those dimensions are violated. Food prices are the major indicators and determinants of the access and stability dimensions, and thus high domestic food prices and food insecurity are to some extent used interchangeably in this paper (operationalization of food security is provided in a separate section).

Social unrest: In this paper, social unrest refers to a host of disruptive collective manifestations, such as the widespread occurrence of protests or demonstrations over a definite range of issues (Hendrix, Haggard, & Magaloni, 2009, p. 6). In its most basic definition, protest refers to "*an organized public demonstration expressing strong objection to an official policy or course of action*" (Oxford Dictionaries). Protest emerges either as a reflex or a conscious response to deprivation or social grievances. Social unrest can thus be understood both as irrational psychological responses to objective forms of hardships, as well as rational, organized and orchestrated collective actions (Crossley, 2002, p. 11; Eisinger, 1973, p. 13).

CHAPTER TWO: Literature Review

Given the nature of this paper, the following literature review will be divided into two main sections. The first section will focus on the evolving concept of security in international relations, away from a narrow state-centered understanding towards and people-centered view of security that incorporates food security as a central element. Furthermore, studies dealing with food security in Indonesia will be reviewed.

The second section will then provide a review of the literature dealing with the nexus between food insecurity and social conflict. A specific focus is placed on historical examples of food riots, episodes of social unrest during the 2008 world food crisis, and, last but not least, on the role of food insecurity in triggering the Arab Spring.

The Evolving Concept of Security in IR

Food Security as a Core Component of Human Security

The study of international relations traditionally employs a realist, statist concept of security. However, dissatisfaction with this narrow and inadequate understanding of security led to the development of the concept of human security, which, contrary to the orthodox definition of security, puts security of human lives at the center. The late Mahbub ul Haq[1] highlighted the difference between traditional notions of security and the new concept by stating that human security takes into focus the "*security of people, not just territory*" and the "*security of individuals, not just nations*" (cited in Fukuda-Parr & Messineo, 2012, p. 2).

While the new concept could not yet supersede the military and state-centered understanding of security, it nevertheless gained increasing prominence and relevance since the end of the bipolar confrontation in the early 1990s. In recent years, a bulk of literature emerged, defining, explaining, criticizing and defending the concept of human

[1] Mahbub ul Haq was an economist and Pakistan's minister of finance from 1982 to 1988. He later served as an advisor to UNDP, where he initiated the concept of human development and the HDI.

security.[2] Still, human security remains a contested concept regarding its political relevance and practical usefulness (Paris, 2001).

Furthermore, human security is not only contested but it also lacks a single consensus definition. In its broad definition, which is employed by the United Nations (UN), human security is concerned with all threats and vulnerabilities to human freedom and dignity. The 1994 Human Development Report published by UN Development Programme (UNDP) for the first time generated a coherent concept of human security, which then entered the public discourse and is thus now commonly cited as the source of the contemporary notion of human security. The initial UNDP report outlined seven dimensions of human security: economic security, food security, health security, environmental security, personal security, community security and political security (UNDP, 1994, p. 24 f.). Six years later, the importance of food security was reaffirmed in the UN Millennium Declaration (UN General Assembly, 2000). In response to the UN Secretary-General's call at the 2000 Millennium Summit for a world "*free of want*" and "*free of fear*", the Commission on Human Security was established in January 2001. The subsequent report published by the commission in 2003 echoed the UN Millennium Declaration and stated that "*food insecurity and hunger undermine a person's dignity and well being*" and that thus states not only need to maintain an adequate national supply of food but also have to place an existing adequate supply of food at the disposal of those who are food insecure (Commission on Human Security, 2003, p. 14).

To be sure, the importance of food security as an integral part of human security has not only been recognized and accepted by UN institutions, but also by the academic world and world leaders. Security scholar Benjamin Shepherd (2012, p. 199) from the University of Sydney provided three main reasons why food security and hunger should

[2] For a critical review of the concept of human security, see: Fukuda-Parr, S., & Messineo, C. (2012, January). Human Security: A critical review of the literature. *CRPD Working Paper (11)* . Leuven: Centre for Research on Peace and Development (CRPD).

warrant greater attention from security scholars: first, with almost one billion hungry people worldwide, the deprivation of food is a major threat to life and a great source of physical harm for individuals. Second, by failing to address the issue of food insecurity, political elites are undermining their legitimacy. Third, food insecurity can thus be antecedent to political instability and conflict. These last two points, were also acknowledged by – among other world leaders – German chancellor Angela Merkel at the peak of the world food crisis in July 2008, when she argued that food insecurity "*threaten democratization, destabilize countries and lead to international security problems*" (DW, 2008).

Food insecurity has, thus, not only been recognized as serious and clear threat to human security, but also as a dangerous catalyst for social unrest, conflict and political instability.

Studies on Food Security in Indonesia

In the aftermath of the Asian Financial Crisis 1997/1998 and in the wake of the development of the paradigm of human security, scholarly studies assessing the state of food (in-)security in Indonesia also began to proliferate. Gingrich, Horst, and Umidha (2001) analyzed in a comparative study the nexus between foreign exchange, food security and financial crises in Indonesia and the Philippines. As a general finding, they established that the aggregate cereal supplies in both countries were severely affected by the cost of food imports and the available foreign currency. Both countries thus were (and in fact still are) dependent on agricultural surplus production of neighboring countries in order to secure food security for their own populations. Consequently, the Asian Financial Crisis in 1997/1998 led to food insecurity in both countries, which culminated in Indonesia in the overthrow of the authoritarian Suharto government that had ruled Indonesia since the 1960s. However, the authors also pointed out that Indonesia's decline in cereal supplies during this crisis exceeded that predicted by a foreign exchange shortage model. They thus concluded that in the short-run, the food security of food-importing countries

such as Indonesia (or the Philippines) is a function of domestic food production, food import prices and foreign currency resources.

Assessing Indonesia's food security situation a decade after the Asian Financial Crisis in a study commissioned by the UN Economic and Social Commission for Asia and the Pacific (UNESCAP), economists Rusastra, Napitupulu and Bourgeois (2008) examined the national impact of export support and food aid measures for soybeans, sugar and milk – three commodities with a very high import dependency ratio. The authors' detailed analysis found no evidence that a removal of export support for those three commodities would significantly jeopardize Indonesia's food security at the macro level. Furthermore, a more general finding of their study was that the production of primary commodities was increasing and food prices were stable, but that nonetheless at the same time regional transient food insecurity in the country was rampant. According to Rusastra, Napitupulu and Bourgeois (2008), the proportion of food insecure households in rural areas was consistently higher than urban areas.

Applying a comparative research design, Norwegian scholar Hans Morten Haugen (2009) puts the role of biofuels and their impact on food security into the spotlight. Looking at Brazil, Indonesia and Tanzania, the author analyzed their energy security strategies, and how these national strategies for increased biofuel production took into account food security considerations. Haugen (2009) concluded that there is indeed a considerable risk in all three countries that the use of agricultural resources for improvements of national energy security will be to the detriment of the most vulnerable parts of society, who might face increased food insecurity.

In a study for the Canada-based International Institute for Sustainable Development, Zamroni Salim (2010) examined the food security concerns of Indonesia by not only assessing the overall impact of the world food crisis 2008 on the country's food security, but by specifically analyzing the state of food insecurity in the three provinces

East Nusa Tenggara, West Nusa Tenggara and Yogyakarta. The author confirmed the findings of Rusastra, Napitupulu and Bourgeois (2008) insofar that he found evidence that poor families in rural areas – i.e. in the provinces of of Nusa Tenggara – faced great difficulties in accessing food. Salim (2010) also concluded that the world food crisis 2008 caused the most damaging effect for provinces and districts far from the country's food centre, Java. Furthermore, the author found that in the case of Indonesia food insecurity was not related to the lack of food availability, but to the lack of access to food.

C. Peter Timmer (2010b), professor emeritus at Harvard University and eminent food security economist, came to a similar but somehow different conclusion. At a conference jointly organized by the Asia Foundation, Asian Development Bank (ADB), the UN Food and Agriculture Organization (FAO), the International Fund for Agricultural Development (IFAD), and the U.S. Agency for International Development (USAID) in Manila in 2010, Timmer asserted that the 2008 food crisis had only a minor impact on the welfare of poor consumers in Asia and Indonesia. He provided three reasons: first, the relative stability of rice prices in the region; second, the already high level of rice prices prior to the crisis; and thirdly, the decline in rice consumption.

Bustanul Arifin (2012), an Indonesian agricultural economist, assessed Indonesia's food security from a different angle: his objective was to analyze the nexus between environmental risks and food security. In his case study, Arifin found empirical evidence that droughts, floods and other natural disasters could cause sudden crop failures, thus decreasing food production. The author consequently concluded that this would not only negatively affect the overall food security of Indonesia, but also especially be to the detriment of urban and rural vulnerable population.

Both expanding and updating the findings of both Timmer (2010b) and Arifin (2012), a policy paper (Baker, et al., 2013) recently published by the Centre for International Security Studies at the University of Sydney provided an exhaustive analysis of the ways

in which food-related policies in Asia intersect with local and regional food security dynamics. By specifically assessing the impact of those policies on local communities and across the wider region, the authors of the paper asserted that insufficient policy planning and poor governance are the main factors behind food insecurity in Asia.

In summary, it can be stated that over the last decade various studies have already addressed issues of food security in Indonesia from different perspectives. Some focused on the nexus between specific factors and food security, e.g. foreign exchange (Gingrich, Horst, & Umidha, 2001), or the impact of food aid (Rusastra, Napitupulu, & Bourgeois, 2008) and biofuels (Haugen, 2009). Others, however, assessed the degree of food insecurity at the regional (Timmer, 2010b; Baker, et al., 2013), the national (Arifin, 2012) or sub-national level (Salim, 2010) during singular events, e.g. during the world food crisis in 2008. Nonetheless, till date, no study has addressed specifically the nexus between food insecurity and social unrest in Indonesia.

The Nexus between Food Insecurity and Social Conflict

From "Bread Riots" to "IMF Riots" and Civil Conflict

The Malthusian equation of "*angry man* = *hungry man*" is probably as old as mankind, and numerous scholars have described, analyzed and explained the causal relationship between food insecurity and protest. Anecdotal evidence for civil strife related to food prices and shortages exists for most societies around the globe, but "*bread riots*" as common forms of collective action have been primarily analyzed for the Western world (Thompson, 1971; Tilly, 1971; Taylor, 1996; Cunningham, 2010). Most prominently, the outbreak of the French Revolution 1789 and the wave of civil unrest across Europe in 1848 have been traced back to food insecurity (Berger and Spoerer 2001, cited in Brinkman & Hendrix, 2011, p. 7).

Focusing on more contemporary cases, sociological studies examined the relationship between structural adjustment programs and austerity measures authored by

the International Monetary Fund (IMF) and the World Bank, and popular uprisings – the "*IMF riots*". Consequently, the focus shifted towards developing countries. Walton and Seddon (1994) came to the conclusion that these "*large-scale collective actions including political demonstrations, general strikes, and riots*" were "*animated by grievances over state policies of economic liberalization, implemented in response to the debt crisis and market reforms urged by international agencies*" (p. 39). Not food insecurity alone, but also other grievances, such as social injustice and social hardship in general were identified as causal to the onset of the "*IMF riots,*" which were largely an urban phenomenon.

Similarly, other studies on the economic determinants of social unrest found clear empirical evidence of a negative link between economic growth and political violence. Based on an analysis of quantitative data from 15 Indian states from 1982 to 1995, Anjali Thomas Bohlken from the University of British Columbia and World Bank researcher Ernest John Sergenti (2010) asserted that just a one percent increase in the economic growth rate decreases the average number of social unrest incidents by over five percent.

Not only focusing on mild political violence such as riots, but on the most severe forms of civil conflict, political scientists David Sobek from Louisiana State University and Charles Boehmer (2008) from University of Texas at El Paso examined the effect of food supply on civil conflict. Their findings indicated that providing sufficient food supplies to the population decreases the risk for civil war in a state.

The World Food Crisis 2008 and Food Riots

Beginning in late 2007 and continuing into 2008, global food prices peaked at high levels. This rise in food prices allegedly led to episodes of social unrest around the world and the notion of "food riots" gained prominence in media, academia and domestic and international politics.

Several scholars also analyzed the relationship between skyrocketing food prices on the international level and civil strife on the domestic level. Marc F. Bellemare (2011),

from Duke University, probed the impact of food prices and food price volatility on food-related political unrest using monthly data at the international level for the period between 1990 and 2011. He came to the conclusion that hikes in food prices indeed appear to have led to political unrest, whereas food prices volatility correlated with decreases in social unrest (Bellemare, 2011, p. 5).

Focusing more narrowly on the 2007/2008 food crisis and incidents of social unrest in West Africa, North Africa and the Middle East, Ray Bush (2010) from the University of Leeds demonstrated that spikes in food prices may have triggered the riots, but that they were merely catalysts and that there were many other underpinning factors such as injustice, inequality and political repression which also played an important role. Furthermore, Bush (2010, p. 120) also correctly highlighted that 2007 had witnessed record grain harvests and that thus food insecurity in 2008 was not so much an issue of food availability, but of food accessibility.

A joint study by Cullen Hendrix from the University of North Texas, Stephan Haggard from the University of California, and Beatriz Magaloni from Stanford University (2009) – using a data of 55 major cities in 49 Asian and African countries for the period 1961- 2006 – came to the conclusion that the impact of food prices on riots is contingent on regime type: riots upon food price changes occur more frequently in hybrid regimes than in democratic or repressive regimes. Even more interesting is their finding that food price declines rather than equivalent price increases are associated with a greater incidence of social unrest (Hendrix, Haggard, & Magaloni, 2009, p. 5).

Contrary to that finding, a quantitative study of a panel of over 120 countries during the 1970 to 2007 period conducted by IMF researcher Rabah Arezki and Markus Brückner (2011) from the University of Adelaide showed that in low income countries, "*increases in the international food prices significantly increase the incidence of anti-government demonstrations, riots, and civil conflict*" (p. 2 f.). This conclusion can be reconciled with

another recent study by the World Food Programme (WFP), which concluded that: "*changes in food security, rather than levels of food insecurity, are probably most influential* [in triggering social uprisings]. *Food insecurity is neither a necessary nor a sufficient condition for violent conflict*" (Brinkman & Hendrix, 2011, p. 2).

Food Insecurity and the Arab Spring

What role did changes in food security play during the Arab Spring, the popular uprising in the Middle East and North Africa (MENA), which was triggered in Tunisia by the self-immolation of the street vendor Mohamed Bouazizi in December 2010 and then quickly spread to neighboring Arab countries and toppled several authoritarian regimes? During the protests in Yemen, one protester wore a improvised helmet made from bread loaves taped to his head – this absurd image spread around the world and it seemed to confirm the notion that the protest were not so much about democratic aspirations and human rights, but mainly about social grievances related to unemployment, poverty and food insecurity. The protestors' slogan "*bread, freedom and social justice*" was regarded as just another confirmation of this interpretation of current events (VOXXI, 2012).

In addition, demonstrators in Tunisia, Jordan and Yemen were waving baguettes to illustrate their demands (The International Institute for Strategic Studies, 2011). Consequently, prominent New York Times columnist Thomas L. Friedman listed four "*big causes*" for the Arab Spring; among them were high food prices (Friedman, 2011). This interpretation of events has been shared widely in the media (Lowrey, 2011).

Some scholars and seasoned observers also believed that food played a crucial role as a catalyst for the protests. A seminal study by the New England Complex Systems Institute linked the outbreak and sudden spread of the Arab Spring not to long-standing political failings of the governance systems in the affected states, but rather to their sudden perceived failure to provide essential security – i.e. food security – to their populations (Lagi, Bertrand, & Bar-Yam, 2011, p. 2). Rami Zurayk (2011), a professor at

the American University of Beirut, linked the onset of the protests to the roaring global demand for bread and the high dependency of Arab countries on wheat imports, thus leading to food insecurity for large parts of the population. In a similar vein, journalist Frida Ghitis (2011) regarded food price inflation and high unemployment as the main socioeconomic grievances that propelled the Egyptian revolution: "*Oppression is more easily endured when it comes with prosperity; when it is accompanied instead by worsening poverty and hunger, the seeds of discontent start sprouting*".

Others admitted that food insecurity played a role, but emphasized that it was not the main or only reason for the uprising (Rosenberg, 2011, Baragona, 2011). Jane Harrigan of London's School of Oriental and African Studies (SOAS) explained: "*The food-price spike was the final nail in the coffins for regimes that were failing to deliver on their side of the social contract*" (quoted in The Economist, 2012). And Liliana Balbi, senior economist at FAO, stressed that food insecurity played only a minor role during the uprisings in 2011: "*Definitely this unrest is not related to soaring food prices in general*" (quoted in Henshaw, 2011). Other experts, including World Bank President Robert Zoellick, agreed with this view and labeled high food prices merely as an "*aggravating factor* "(The International Institute for Strategic Studies, 2011), while David Pollock from the Washington Institute for Near East Policy warned that giving too much credit to food insecurity would be a "*huge oversimplification*" (quoted in Zimmerman, 2011). This school of thought believed that "*what has been sustaining the protests* [in Egypt] *is a quest for freedom*" (Coleman, 2011), and not so much about socioeconomic grievances.

The next chapter describes the research methodology and the different tools and approaches used to underline the thesis statement.

CHAPTER THREE: Research Methodology

Research Strategy

A research strategy defines when, where, how and how often empirical indicators are measured, and thus constitutes a salient quality criterion of the scientific research process. By empirically reconstructing singular historical events and interpreting those events based on quantitative macro data, social reality is retroactively ordered and explained. Unlike in scientific experiments or quasi-experiments, no control techniques can be applied to social events: history cannot be repeated in order to test the validity of alternative hypotheses. Consequently, the research strategy of this paper can be classified as an ex-post-facto approach.

Research Design

In order to examine the validity of the general thesis that food insecurity triggered global unrest during the world food crisis in 2007/2008, the format of a qualitative single case study with Indonesia as the unit of analysis has been chosen. The research design thus is limited in temporal and spatial terms, as well as in terms of methodology. This, however, raises the questions of the relevance, utility and validity of this paper. Therefore, it is important to note that in any academic discipline, research-based knowledge is generated and built up as much through the findings of accumulated single cases studies as through the evidence provided by a single definitive macro study. To be sure, it is of utmost importance to highlight that the findings of a single case study can neither confirm nor eliminate the general thesis. Only an accumulation and consolidation of various single case studies as part of a longitudinal or cross-country research could provide confirmation or falsification. Nonetheless, it is equally important to note that single case studies can provide hindsight regarding the validity of theories on the macro-level by testing specific hypotheses at the micro level. Furthermore, it is of utmost necessity to stress that a qualitative methodology is not inferior to quantitative methods. As scholars Andrew Bennett and Colin Elman (2006) correctly stated: " […] *conducting in-depth case studies*

can [...] *offer separate inferential advantages. Some of these advantages are highly complementary to quantitative approaches. For example, case studies can help determine whether correlations in statistical analyses are spurious* [...]“ (p. 458).

Concept Specification

This paper tries to shed light on the nexus between food insecurity as the independent variable and social unrest as the dependent variable.

Any analysis of the relationship between those two variables thus has to begin with an inquiry of the social events that occurred. First, it needs to be proven that social unrest took place. As James Mahoney (2012) from Northwestern University pointed out: “[…] *one starts with a well conceptualized and carefully defined outcome* [i.e. dependent variable]. *The challenge then is to demonstrate rather than assume that this outcome occurred in the specific case under analysis*” (p. 588). According to Tulia G. Faletti (2006, p. 6) from the University of Pennsylvania, an explicit chronology of the events under considerations must be empirically reconstructed. Second, once it has been demonstrated that protests and demonstrations took place, the qualitative characteristics of those must be described: what was the geographical scope, the intensity and duration of social unrest? Who was involved, who participated in it? Third, one has to present the conflictual issues or objective hardships that were addressed by the protestors. Only this process will allow uncovering the micro-foundations of individual behavior that connect hypothesized causes and outcomes.

In order to analyze the set of questions regarding the dependent variable, this paper follows the tradition of methodological individualism and applies the method of process-tracing to its research (Bennett & Elman, 2006; George & McKeown, 1985; Falleti, 2006). As Faletti (2006, p. 1) stated, the process-tracing approach as a within-case methodology was developed in order to incorporated historical narratives within abstract explanations in the social sciences. The purpose of this approach is to uncover the stimuli that actors

attend to as well as the actual behavior that then occurs as a consequence of certain stimuli (George & McKeown, 1985, p. 35). According to Mahoney (2012), the process-tracing approach constitutes a methods that allows testing hypotheses about the causes of a particular outcome in a specific case by first establishing that initial factors or processes occurred; second, by demonstrating that a subsequent outcome also took place; and third, explaining that the former was a cause of the latter (p. 570 f.).

It is therefore only after an empirical reconstruction and analysis of the dependent variable that one can proceed to examine the independent variable and the potential causal relationship between independent and dependent variables. Here, the guiding questions are: did the causal factors (i.e. food insecurity) hypothesized to explain the outcome (i.e. social unrest) actually occur? And did the posited causal factor actually cause the outcome (Mahoney, 2012, p. 588)?

Theoretical Framework

To examine and explain the occurrence of social unrest, many scholars resort implicitly or explicitly to some form of social frustration theory. In a seminal study by the New England Complex Systems Institute that predicted the outbreak of the Arab Spring based on rising global food prices, the authors argued that "*food scarcity or high prices often underlie riots, unrest and revolutions*" (Lagi et al., 2011, p. 2). This was based on the assumption that "*widespread unrest does not arise from long-standing political failings of the system, but rather from its sudden perceived failure to provide essential security to the population*" (p. 2). The authors also asserted that "*conditions of widespread threat to security are particularly present when food is inaccessible to the population at large*" (p. 3), thus providing the crucial linkage between food insecurity and social unrest.

As an effect of the phenomenon of globalization, higher volumes of commodities – including food – are being traded in the global market place, which means that prices are increasingly correlated and developments on the global level are easily and rapidly

transmitted to the national level. Several reports thus highlighted that episodes of social unrest occurred during the world food crisis in 2007/2008: the International New York Times (2011) reported that 30 food riots took place worldwide in 2008, the Guardian counted incidents of food and price riots in 17 different places by April 2008 (Stratton, 2008) and a summary report of food riots by development sociologist Mindi Schneider (2008) from Cornell University listed 25 countries where social unrest had allegedly occurred in 2008 due to food insecurity. Both the Guardian and Schneider included incidents from Indonesia in their reports.

Schneider (2008) explained the causal mechanism between food insecurity and social unrest with the crucial role of the peaking of global food prices at high levels. Due to the phenomenon of globalization, a global integration of food and agricultural systems had taken place, which also implies that developments at the global level will be transmitted to the national level. Schneider thus asserted that high global food prices also meant high national food prices and thereby increasing level of food insecurity at the domestic level. She hence argued: "*The world's poor suffered the greatest blow as food prices rose to unattainable levels, rations decreased or disappeared, and as a result, hungry people took to the streets in protest* "(Schneider, 2008, p. 3).

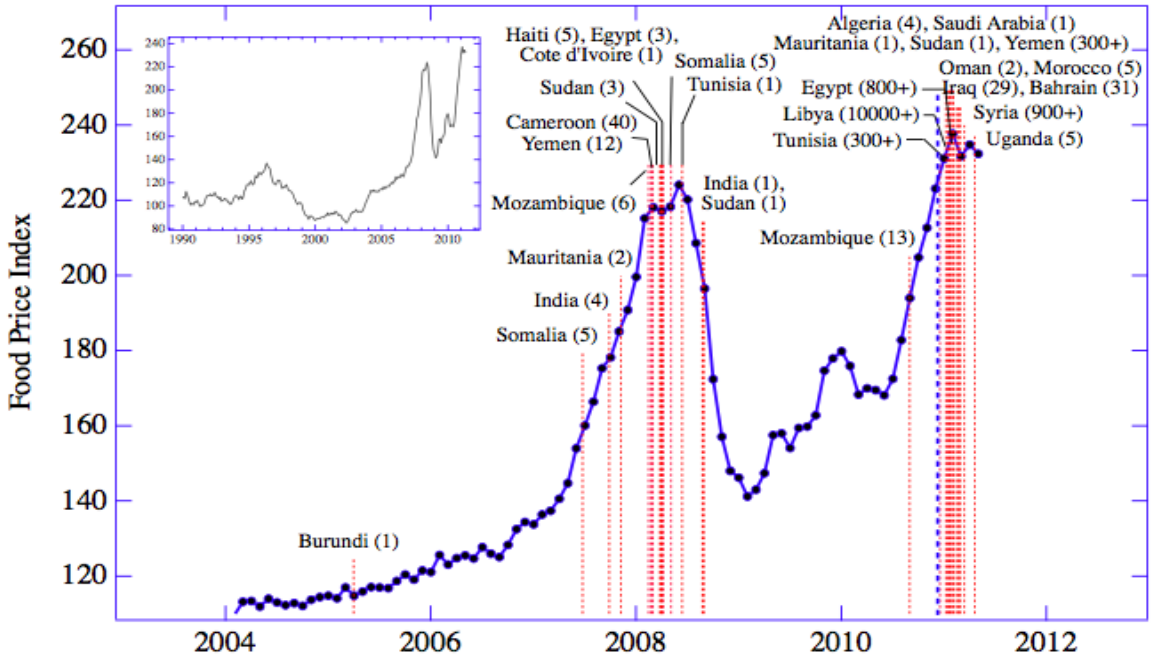

Figure 2: Time dependence of FAO Food Price Index from January 2004 to May 2011. Red dashed vertical lines correspond to beginning dates of "food riots" and protests. The overall death toll is reported in parentheses. Source: Lagi, Bertrand, & Bar-Yam, 2011, p. 3;

In a similar vein, Lagi et al. (2011, p. 4) asserted that high global food prices have to be regarded as a precipitating condition for social unrest. The causal mechanism behind this is the assumption that deteriorations in food security (triggered by price hikes) will lead to conditions in which random events might trigger social unrest (p. 6). Conducting a bivariate analysis and calculating binomial tests, the authors found empirical evidence that social unrest is more likely to occur above a threshold of the FAO price index of 210. In that way Lagi et al. were not only able to explain episodes of social unrest in 2008, but also predicted correctly the upheaval in North Africa and the Middle East in 2011. Figure 3 provides an illustration of the causal mechanism at the individual level that is underlying the mode of both Schneider (2008) and Lagi et al. (2011).

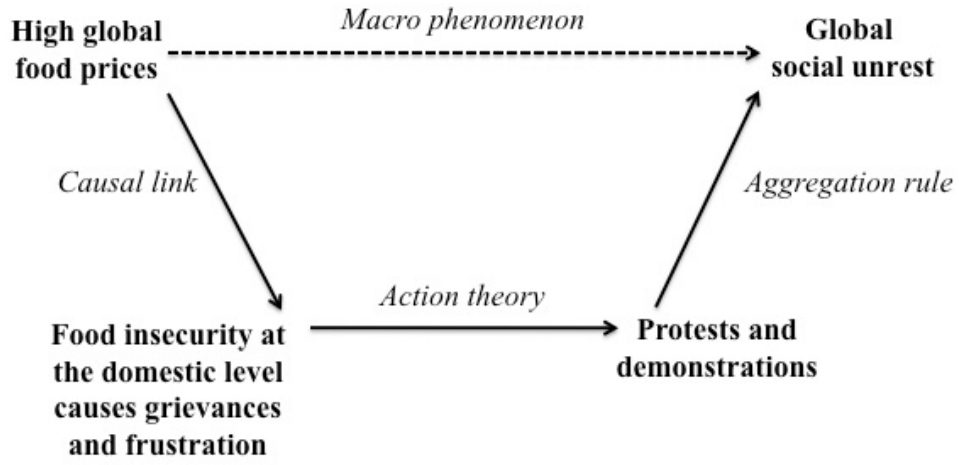

Figure 3: Individualistic explanation for macro phenomena: the correlation between high food prices and global social unrest; Source: own compilation;

Countering Schneider (2008) and Lagi et al. (2011), this paper argues that high global food prices alone are not a good predictor of protests and demonstrations since they not necessarily lead to food insecurity at the domestic level. Furthermore, those who engage in various forms of protest are not those who are most affected by food insecurity. Hence, this paper asserts that the relative deprivation theory as an alternative concept has a higher explanatory power with regard to the episodes of social unrest that occurred during the world food crisis in Indonesia in 2007/2008.

The theory of relative deprivation has first been outlined coherently in Ted Robert Gurr's (1970) seminal book "*Why Men Rebel*". The goal of Gurr's work was to develop a theory that could explain collective attacks within a political system against the political regime or its policies (Tilly C. , 1971, p. 416). Based on exhaustive quantitative analysis and drawing on elementary psychology, Gurr came to the conclusion that individuals get angry when they are denied certain things or commodities that they feel entitled to. This perception of discrepancy between value expectations and the environment's value capabilities has been termed "*relative deprivation*" (van der Dennen, n/a; Gurr, 1970, p. 24). If individuals feel a sense of relative deprivation they will, given the opportunity, protest. And when many individuals protest or rebel simultaneously, social unrest or

rebellion occurs (Tilly C., 1971, p. 417). This assumption is also in accordance with Samuel Huntington's (1968) famous thesis that political instability is caused by social change and unfulfilled expectations.

Apart from this seemingly obvious conjecture, the theory of relative deprivation also contributed to the understanding of the correlation between frustration and social unrest by highlighting that "*those who are most deprived* […] *are not those who usually violently rebel. Of course there have been food riots and peasant uprisings, but most often revolutions and violence have occurred when conditions are better or have been improving, and among those who are not the most deprived*" (Rummel, 1977, p. 5). Those who suffer from hunger rarely protest. And food prices or food price volatility alone rarely lead to protests and demonstrations. And in many cases social unrest occurred without food insecurity as a precipitating condition. Evan Fraser and Andrew Rimas (2011) – authors of "*Empires of Food: Feast Famine and the Rise and Fall of Civilization*" – accurately pointed out that the psychological element of a sense of injustice plays a crucial role. To be sure, moral outrage and a feeling or relative deprivation can be caused by other things than food insecurity and rising food prices. Other factors might include: inflationary pressures, a deterioration of the standard of living or simply the fear of an aggravation of circumstances. Gurr (1970, p. 25) categorized those factors as welfare values, which either contribute to physical well-being (e.g. food, shelter, physical comforts) or self-realization. Figure 4 provides an illustration of this general model.

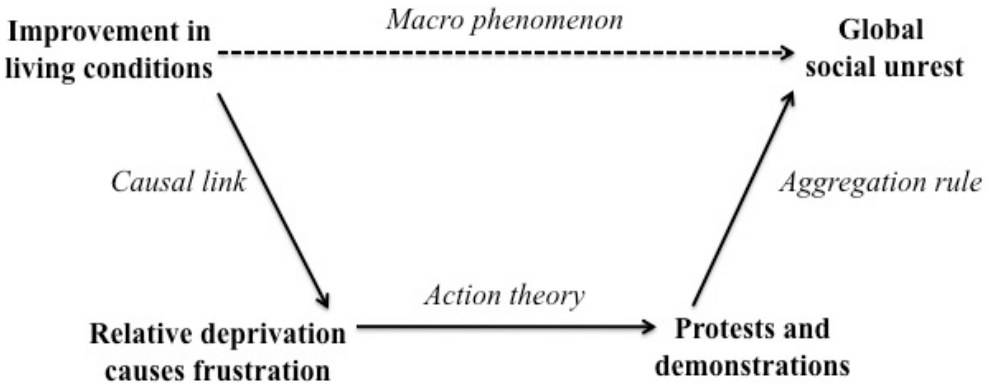

Figure 4: Individualistic explanation for macro phenomena: the correlation between improved living conditions, relative deprivation, frustration and global social unrest. Source: own compilation;

According to a report released by UNDP (2013), all countries have witnessed rapid development over the last decade in terms of achievements in the education, health, and income dimensions as measured in the Human Development Index (HDI). This definitely also holds true for Indonesia, which continuously improved its HDI value from 0.540 (2000) to 0.575 (2005) and to 0.601 (2008) (Country Economy, 2013). Correlated with improvements in human development is the strong pace of economic growth that Indonesia has seen. Indonesia's Gross National Income (GNI) per capita (purchasing power parity (PPP) in current international dollar) grew from 2,160 (2000) to 2,990 (2005) and 3,750 (2008) (World Bank Data). Hand-in-hand with this development, the poverty headcount ratio at the national poverty line has been in slow but steady decline: from 18.2 % (2002) to 16 % (2005), up to 17.8 % (2006) and down again to 15.4 % (2008) (World Bank Data).

An interpretation of those macro data leads to the preliminary appraisal that living conditions in Indonesia have indeed been improving in the years prior to the time period under consideration in this research. Deduced from the relative deprivation theory, the prediction of the alternative explanation would be that social unrest occurs when economic

or social shocks and changes lead to a discrepancy among Indonesians between their value expectations and the environment's value capabilities.

Hypotheses and Measurement

Based on the concept specification and the theoretical framework outlined above, specific hypotheses can be formulated.

In principle, two different kinds of hypotheses exist. The first category is the descriptive hypothesis, which is a declaratory statement that describes that certain specific events or processes occurred and that they can be measured (Heiman, 2002). The second category is the explanatory hypothesis, which is a conjectural statement of the relation between two or more variables in order to explain or predict certain social action (Kerlinger, 1986).

Mahoney (2012, p. 572) proposes to evaluate those hypotheses by using a hoop test. According to the author, "*a hoop test proposes that a given piece of evidence* […] *must be present for a hypothesis to be valid. Failing a hoop test eliminates a hypothesis, but passing a hoop test does not confirm a hypothesis*" (p. 571). Thus passing a hoop test is a necessary but not sufficient condition for the validity of a given hypothesis.

In this research, the following two descriptive hypotheses will be tested:

H_1: Social unrest took place in Indonesia in 2008.

The hoop test for H_1 is provided by an empirical reconstruction of social events in Indonesia in 2008. Confirming H_1 will prove the existence of social unrest, which constitutes the dependent variable of H_N and H_A. The data for this variable and the hoop test comes from a LexisNexis Academic search of all news in English between January 2008 and December 2008, containing terms such as "*food,*" "*staple,*" "*commodity*" and occurrences of key words such as "*protest,*" "*demonstration,*" "*unrest*" and "*riot*".

H_2: High global food prices in 2007/2008 led to high levels of food insecurity in Indonesia.

Food insecurity must be existing and antecedent to social unrest in order to infer a causal connection between those two variables. Quantitative macroeconomic data from ILO, World Bank and the FAO are used to measure the impact of the world food crisis on the level of food insecurity in Indonesia.

After conducting hoop tests for the two descriptive hypotheses, two explanatory hypotheses will be evaluated:

H_N: High levels of food insecurity led to frustration, thus triggering social unrest in Indonesia in 2008.

H_A: Social unrest in Indonesia in 2008 correlated strongly with the intensity and scope of frustration among the population.

H_N is tested in order to probe the validity of the explanatory model used by Schneider (2008) and Lagi et al. (2011). H_A will be tested in order to assess the explanatory power of the alternative model, developed by the author based on Gurr's (1970) theory of relative deprivation. However, it is important to note that it is not possible to prove that relative deprivation caused social unrest, since a correlation between those variables does not mean that one caused the other.

Operationalization of Food Security

As outlined in the definitions (see Chapter One), food security entails four dimensions: availability, access, utilization and stability (EC - FAO Food Security Programme). As Barrett (2010) pointed out, the first three dimensions are hierarchical, whereas stability is a cross-cutting dimension that refers to both availability and access. In order to be able to measure the abstract concept of food security, which is thus not directly measurable, the

concept needs to be operationalized, i.e. specific correspondence rules must define how to measure the concept with proxy variables.[3]

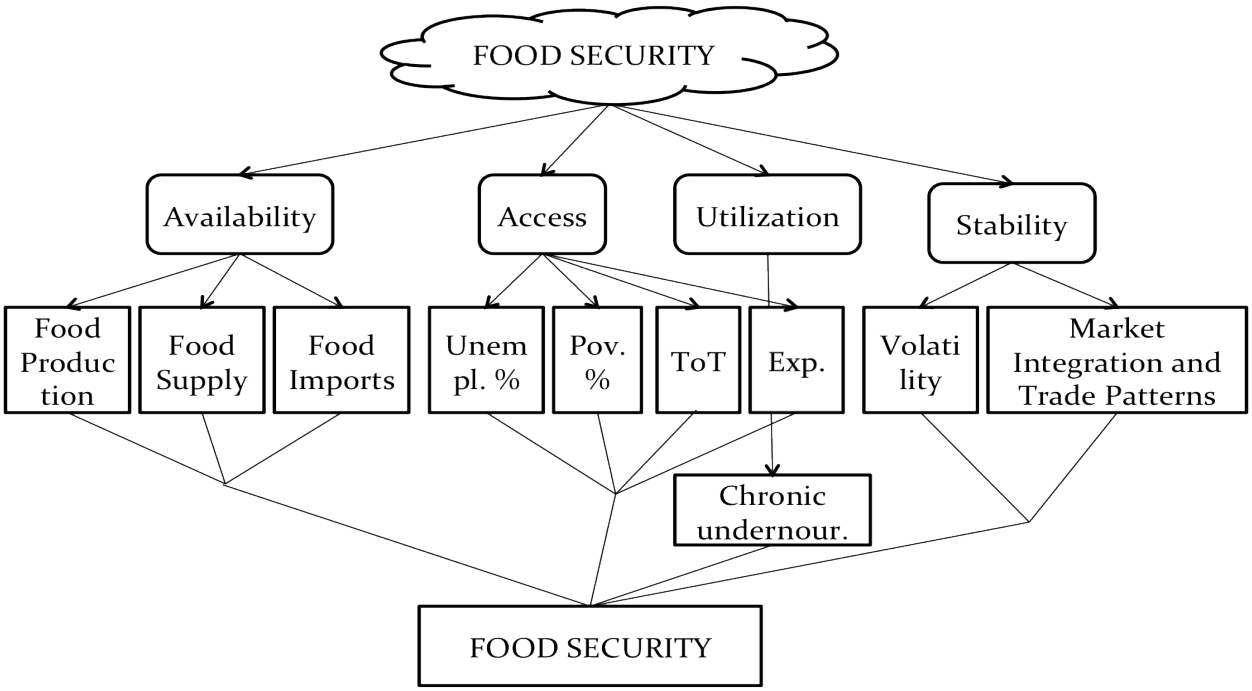

Figure 5: Operationalization of Food Security; Source: own compilation;

Availability, as the first dimension, refers to the physical availability of food. More precise, the FAO defines food availability as "*the availability of sufficient quantities of food of appropriate quality, supplied through domestic production or imports*" (FAO, 2006). Availability can thus be operationalized by assessing food production, food supply and food imports. Nonetheless, while availability measures are widely available, those macro data ignore the unequal distribution and uses of food. Thus, as scholar and Nobel Laureate Amartya Sen highlighted, "*starvation is the characteristic of some people not having enough food to eat. It is not the characteristic of there being not enough food to eat. While the latter can be a cause of the former, it is but one of many possible causes*" (cited in Barrett, 2010, p. 825). Next, one has to assess the dimension of access to food.

[3] The operationalization of food security employed in this research follows the *Monitoring Food Security Technical Guidance Sheet 1* developed by the United Nations World Food Programme.

Access to food constitutes the second important dimension of the concept of food security. It can be defined as: "*access by individuals to adequate resources (entitlements) for acquiring appropriate foods for a nutritious diet. Entitlements are defined as the set of all commodity bundles over which a person can establish command given the legal, political, economic and social arrangements of the community in which they live (including traditional rights such as access to common resources)*" (FAO, 2006). In order to make this rather abstract dimension tangible and therefore measurable, it has been operationalized in terms of the domains of employment, poverty, purchasing power and expenditures (World Food Programme, 2012). The corresponding proxy indicators have been defined in a negative coding as share of unemployment from total labor force (%), share of people suffering from poverty (%), volatility of terms of trade (%) and share of food commodity of per capita expenditures (%).

The third dimension of food security is food utilization. According to the FAO, food utilization refers to an "*individual's ability to absorb and metabolize nutrients and therefore is an important dimension of the concept of food security*" (FAO, 2006). In this paper, food utilization has been operationalized in terms of the domain of nutrition. The corresponding proxy indicator has been defined as prevalence of child malnutrition. This constitutes the percentage of children under age five whose weight for age is more than two standard deviations below the median for the international reference population ages 0 to 59 months (based on the World Health Organization's new child growth standards released in 2006).

The last dimension of food security is stability. "*To be food secure, a population, household or individual must have access to adequate food at all times. They should not risk losing access to food as a consequence of sudden shocks (e.g. an economic or climatic crisis) or cyclical events (e.g. seasonal food insecurity). The concept of stability can therefore refer to both the availability and access dimensions of food security*" (FAO,

2006). Referring to the availability dimension, stability will be assessed by analyzing the stability of trade patterns of the main staple rice. The dimension of stable access to food will be assessed by the proxy indicators of price stability and market integration of the staples rice and wheat.

CHAPTER FOUR: Findings and Analysis

Empirical Reconstruction of Episodes of Social Unrest

First, an empirical reconstruction of food protests in early 2008 will be provided. This will be followed by a description of fuel riots in mid 2008. As Bennett and Elman (2006) stated, "*scholars who use qualitative methods with the causes-of-effects template do not do so because they do not know any better or because they are 'journalists without a deadline*'" (p. 458). Detailed description is essential for understanding the effects and exploring the causes!

Food Protests in early 2008

In mid-January, Indonesia suffered the biggest food-related protests since the 2007 Mexican tortilla crisis. These protests followed a week of social unrest in Pakistan after shortages of wheat and Egypt's ban on rice exports to maintain local supply, and they just marked the beginning of many episodes of social unrest and food riots around the globe in 2008 (Aglionby 2008a).

On 14 January 2008 more than 10,000 protesters, many of them tofu and tempeh producers and vendors, rallied outside the presidential palace in Jakarta and demanded lower prices for soybeans, of which tempeh and tofu are made of (Aglionby, 2008a; Grigg, 2008; Osman, 2008a). Both are nutritious, protein-rich and normally cheap staples that are eaten together with rice and which are very popular among Indonesians (Osman, 2008a). However, at the beginning of 2008 the price of soyabeans in Indonesia had increased from 2,750 rupiah in January 2007 to almost 8,000 rupiah, and the price of tofu in Jakarta had

been inflated by more than 50 %, which made this staple less accessible for the urban poor, and at the same time threatening the income of thousands of tofu and tempeh producers and vendors in the Indonesian capital (Grigg, 2008). In addition to the demonstration, producers and vendors went on strike in protest (Osman, 2008a).

However, the government successfully calmed the protests when it abolished the 10 % import duty on soybeans on 15 January in order to lower the price of tofu and tempeh (Grigg, 2008). Furthermore, the government implemented certain incentives such as free seeds in order to increase domestic production of soybeans from almost 600,000 tons in 2007 to 900,000 tons in 2008 (Aglionby, 2008a). However, in addition to lifting the import duty on soybeans, at the beginning of February 2008 the government also a cut the value added tax (VAT) on imported soya from 2.5 % to 0.5 (Asmarani, 2008). Furthermore, the government introduced a soft loan scheme for 50,000 street vendors, amounting to 2 million rupiah in total. These measures helped to calm down the protestors, and no further demonstrations related to the availability and the prices of soybeans have been reported for 2008.

Nevertheless, demonstrations and protests were not limited solely to soybeans; also the rising price of other staples raised the concern and anger of many Indonesians. During the last week of January 2008, several street rallies were staged in Jakarta, calling for the government to keep the level food prices in general down (Asmarani, 2008). It has also been reported that in mid-February, "*hundreds of meat sellers took to the streets in Jakarta* […] *to complain about the rising price of beef*" (Murray, 2008).

In addition, in March 2008 about 500 members of the Muslim group Hizbut Tahrir Indonesia took to the streets of the Jakarta to demand the government bring down food prices after Surya newspaper had reported that a schoolboy in East Java had hanged himself out of pain of starvation. As reported, the protesters marched through the capital's main streets to the presidential palace, chanting "*Allahu Akbar*" (God is Great) to legitimize

their demands (The Financial Express, 2008). However, even though Mindi Schneider (2008) has also listed this incident in her summary of food riots, it probably can hardly be counted as a popular protest or riot directly related to food prices. Hizbut Tahrir Indonesia is the Indonesian branch of a transnational radical Sunni movement, which aims to establish a global Islamist caliphate and thus emphasizes issues of more general concern, such as the clash of civilizations or the injustices suffered by Muslims worldwide or, like in this case, social injustice. Therefore the organization has also been labeled as "*conveyor belt for terrorists*" (Baran, 2005). Five-hundred members of this radical group marching through the capital of a country that has more than 237 million inhabitants can therefore not be counted as social unrest or popular protest related to food insecurity, even though the participants made such claims.

In summary, there have been only a limited number of mass incidents directly related to food insecurity in Indonesia in 2008. The biggest and most prominent among them were surely the soybean protests in January 2008, which also received international media coverage and fed into the narrative of the looming global food crisis causing food riots allover the world. However, these demonstrations were largely peaceful. Therefore, it seems reasonable to agree with a 2008 World Food Programme (WFP) Report which states that "*Indonesia has seen none of the rioting over rising food prices that have affected other countries, nor has there been any panic buying here*" (World Food Programme, 2008, p. 1). Nevertheless, the plain fact that protests – albeit peaceful ones – took place lends support to $H_{1,}$ which stated that Indonesia witnessed social unrest in 2008. That those protests were limited to the capital and thus to urban space is not surprising, taking into account that high food prices would in general hurt urban net consumers, but help rural net producers.[4] As it will be demonstrated, from mid May to July

[4] Net food buyers will generally be hurt by higher food prices, while net food sellers will benefit. However, this distinction can be separtated from the question if the household is urban or rural, e.g. most rural dwellers are net food buyers and only rural middle-class surplus producers would benefit from higher food prices. Studies for Indonesia and other Southeast Asian countries also demonstrated that the poorest 20 % of the population

2008 several more incidents – including demonstrations and rioting – took place in Jakarta and other cities, even though those were not directly related to food insecurity.

Fuel Riots in mid 2008

From mid-May 2008 onwards, daily demonstrations by students, Muslim groups and left wing activists had been staged in major Indonesian cities to protest against government plans to raise administered fuel prices (Karmini, 2008). "*Demonstrators protested that the proposed adjustments would disproportionately affect the poor, already struggling with rapid increases in the price of staple goods*" (Bajpaee, 2008). When the government decided to cut fuel subsidies on 23 May and consequently fuel prices increased by 30 % on 24 May, protests escalated and turned into "*fuel riots.*"

During the night from 23 to 24 May, an unknown number of protesters rallied outside the presidential palace, and 26 protesters were arrested. On the next day, 24 May, hundreds of students staged a rally in front of the National University in south Jakarta to demonstrate against the increase in fuel prices. However, this demonstration quickly turned violent. Reportedly, students burned tires on the streets and threw explosive devices at the police. As a consequence, the police arrested more than 100 students for questioning (Agence France Presse, 2008). Simultaneously, 1,000 members of the Muslim group Hizbut Tahrir Indonesia protested in Bandung city in West Java against the cut of fuel subsidies. On 26 May, "*more than 50 university students clashed with police outside the Universitas Kristen Indonesia in Jakarta, hurling stones and burning tyres* [sic!] *before seeking refuge in the university campus*" (Osman, 2008b).

Protests and fuel riots continued throughout the following month, and escalated on June 23, when about 1,000 people protested violently in front of the parliament in Jakarta,

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– no matter if rural or urban – are in most cases net food buyers, which leads to the conclusion that high food prices do not reduce poverty and that the poor would suffer from higher prices. FAO (2011). Recent trends in world food commodity prices: costs and benefits.*The State of Food Insecurity in the World 2011*. Retrieved from FAO on 3 December 2013: http://www.fao.org/docrep/014/i2330e/i2330e03.pdf

trying to break down the gates of the parliament and resorting to violence. Riot police reacted also harshly and used force to disperse the fuel riot, and 16 protestors were arrested (Agence France Presse, 2008). When Indonesian state oil and gas company Pertamina announced to increase the price of liquid petroleum gas (LPG) by 23 % from 1 July onwards, students protested in front of the presidential palace in Jakarta on 30 June. Thirty-five students were reportedly been arrested (Kazmi, 2008). Protests and demonstrations then supposedly trickled away over the course of the following months and there are no further media reports about fuel protests until the end of 2008.

In summary, Indonesia experienced violent rallies and protests that were reportedly directly-related the increase in fuel prices, which can therefore be labeled as "*fuel riots.*" Because of those incidents, together with the food price related social unrest in early 2008, H_1 passes the hoop test.

Nonetheless, as Lagi et al. (2011) emphasized, "*protests can reflect the wide range of reasons for dissatisfaction, broadening the scope of the protest, and masking the immediate trigger of the unrest*" (p. 2). Thus, in a next step, the level of food security in Indonesia in 2008 will be assed in order to test H_2.

Analysis of the Level of Food Insecurity in Indonesia in 2008

Availability of Food

Physical availability of food constitutes the first dimension of food security. Any assessment of food security has therefore to begin with an analysis of food availability, covering the domains of food production, food supply and food imports. Viewed from a global perspective, food production has been increasing in recent years: In 2008 global food production was 13.54 % higher than the average of the years 2004 to 2006. In 2009 and 2010 it was 20.78 % and 21.75 % higher, respectively (World Bank Data). Nevertheless, despite the increases in global food production, food seems not to be equally available to the world population: in 2010 there were 925 million undernourished

people in the world, 906 million of which were in the developing world (FAO, 2010/2011, p. 42). In the case of Indonesia, food production increased constantly and in 2009 was 13 % higher than the average of the years 2004 to 2006 (World Bank Data). The production of rice – Indonesia's main staple – has been constantly growing from 52 million tons (rice paddy) in 2000 to 66 million tons (rice paddy) in 2010.

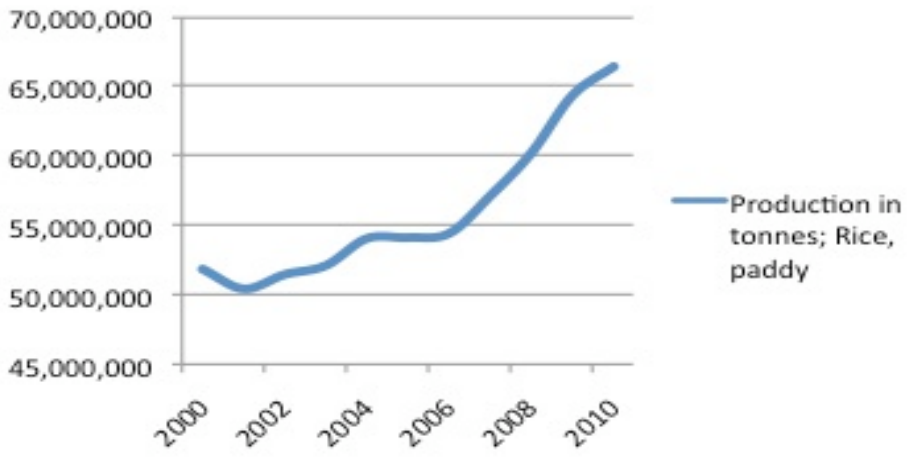

Figure 5: Indonesia: rice (paddy) production (tonnes), 2000 – 2010; Source: compiled by the author based on data by FAO.

Over the same period, the supply of cereals has been slightly increasing, from 2000 to 2009 with an annual compound growth rate of 0.46 % (cf. Figure 6), mainly due to an increase in supply of wheat (1.48 %) and corn (1.40 %) and other cereals, and not related to an increase in Indonesia's main staple rice (milled equivalent), which remained stagnant over that period (FAO Data).

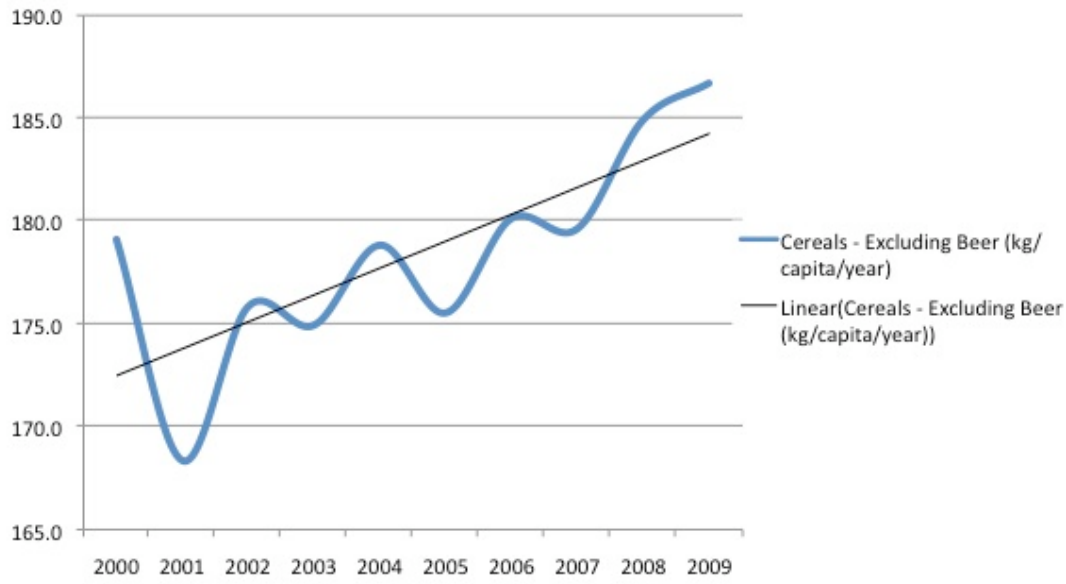

Figure 6: Supply of Cereals (kg/per capita/year), 2000 – 2009; Source: compiled by the author based on data by FAO.

Apart from focusing on the supply of cereals and the main staple rice, one also has to pay attention to the supply of soybeans, which provide the basis for tofu and tempeh, two protein-rich staples that are popular in Indonesia. Looking at the supply of soybeans, it is obvious that it remained relatively stable between 2000 and 2009 at around 1 kg/per capita/year. Nevertheless, in 2007 a spike in soybean supply can be observed. The amount per capita/year rose from 0.9 kg in 2006 to 1.3 kg in 2007, just to fall again down to 0.9 kg in 2008. Even though the quantity of soybeans just fell back to pre 2007 levels and was not significantly lower than the average of the 9-years period, one has to bear in mind that these statistics show an annual average and can therefore not realistically mirror the situation of dramatic soybean shortage in early 2008.

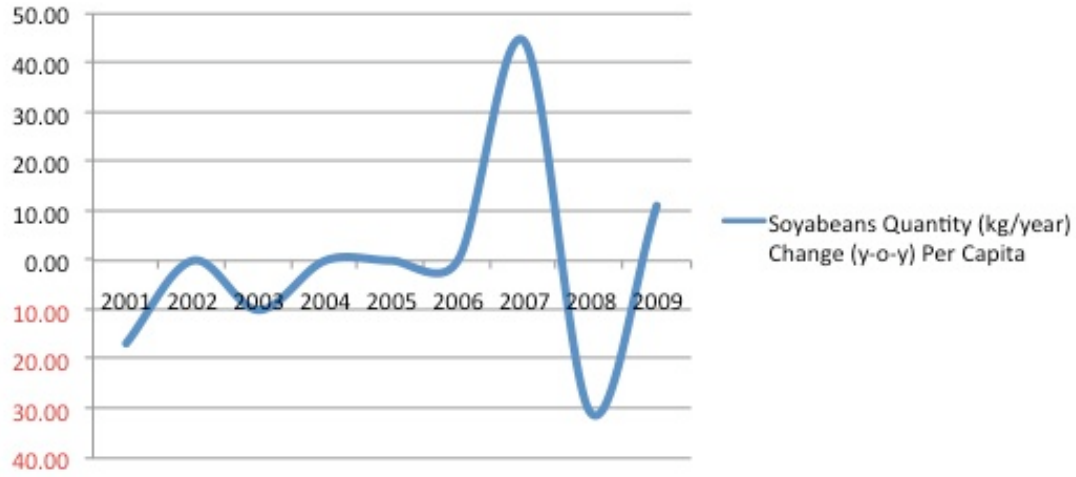

Figure 7: Indonesia: Change (%) of supply of soybeans (kg/per capita/year), 2001 – 2009; Source: compiled by the author based on data by FAO;

However, not all food supplies are produced domestically. The gap between demand and domestic production has to be filled by importing supplies from abroad. While relying on imports for certain goods may be the most efficient way according the theory of competitive advantage, it also makes a country dependent on the actions of external actors such as trading partners, and dynamics of the global market. Since independence, the Indonesian government has taken broad measures – such as trade restrictions and state import monopolies in addition to the temporarily successful efforts to reach self-sufficiency under Suharto in the later 1980s and early 1990s – in order to protect its domestic rice market from external dependency (McCulloch, 2008).

However, while the country is historically a net rice importer, from 2000 to 2008 imports of rice (milled equivalent), largely from Thailand and Vietnam, have been in constant decline, so that Indonesia was quasi self-sufficient in 2008 (Heady, 2010). This trend also reflects national policies that aim at achieving food self-sufficiency in order to be independent and unaffected from external trends such as high food prices. The president of Indonesia has underlined this goal in 2008: "*Indonesia must struggle to reach food self-sufficiency, and learn not to rely on other countries because we have our own good resources with which to develop the agriculture sector*" (The Jakarta Post, 2008b). Apart

from reducing imports, during the world food crisis 2007/2008 Indonesia – which actually did not export any significant amount of rice since 1986 – also imposed strict controls on the export of rice: the target was set to triple the level of rice buffer stocks, from 1.0 to 3.0 million tons, after which exports would be permitted (Timmer, 2010a).

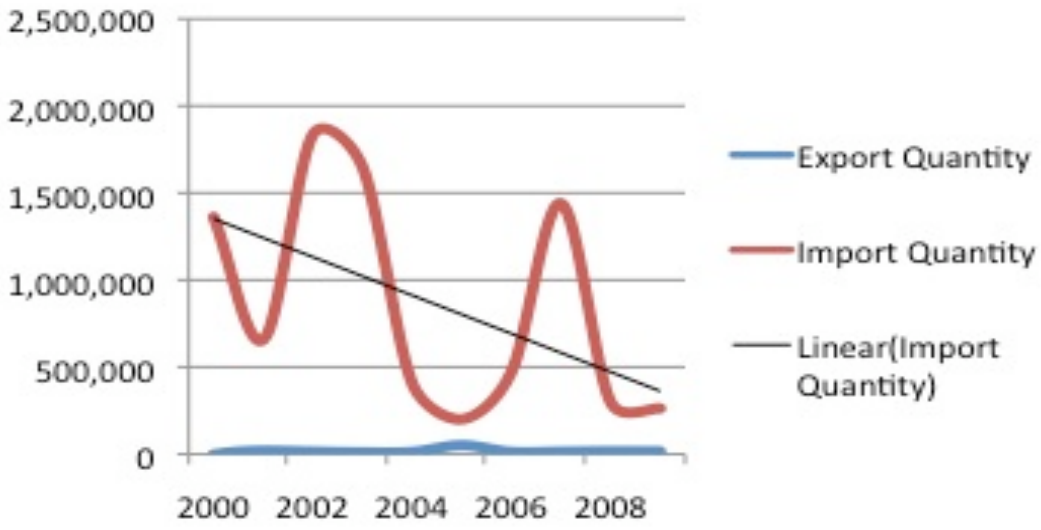

Figure 8: Indonesia: import and export of rice (milled equivalent, in tons), 2000 – 2010; Source: compiled by the author based on data by FAO;

While Indonesia could increase domestic rice production and reduce its imports, when it comes to soybeans the external dependency is stunning: from 2002 to 2008 imports accounted for 57 % to 79 % of the country's demand of two-million tons, whereby imports from the US account for 88 % of all imports on average (FAO Data). In 2007 imports peaked at a record level of 2.24 million tons, while domestic production in that year was significantly below the average of previous years. In 2008 imports fell back on the import level of 2006, whereas domestic production increased dramatically (FAO Data).

The macro data for the supply levels of cereals and soybean thus do not indicate problems of food availability. On the contrary, in the years leading up to 2008, the indicators suggest that levels food production and food supplies have been generally

increasing and in 2008 food supplies in general were sufficient to supply domestic demand (Salim, 2010, p. 3).

However, careful analysis of the data also shows that while Indonesia has been reducing its reliance on rice imports, it remained highly dependent on the import of soybeans to satisfy demands of its domestic market, thus making Indonesia vulnerable to price increases in the global market. This is even more worrisome since quantitative studies have demonstrated that price increases of imported primary commodities – e.g. soybeans – have statistically significant positive effect on the incident of social unrest and civil conflict (Besley & Persson, 2008).

Access

Adequate food availability at the national level does not imply food security at the individual or household level. People need to be able to acquire adequate food. Access to food thus depends on factors such as employment, poverty, purchasing power and expenditures. Analysis of the development of the labor market in recent years reveals that, overall, there has been a constant improvement since 2005 when unemployment peaked at 11.2 % of the total labor force (World Bank Data). Indicators show that unemployment has declined to 8.4 % in 2008 and 7.1 % in 2010.[5] According to the International Labour Organization (ILO), it "*appears that job growth has been back on track thanks to high job growth in the service sector. Despite the impact of the global financial crisis and a protracted recovery of advanced economies from it, employment growth has maintained an upward trend*" (ILO, 2012). However, at the same time vulnerable employment remains high and constitutes 63.4 to 63.7 % (2005 to 2010) of the total employment.[6] In addition, youth unemployment rate stayed at a high level (21.4 %), even though there has been a constant decline since 2005 when it peaked at 32.4 % (World Bank Data). Nevertheless,

[5] Unemployment refers to the share of the labor force that is without work but available for and seeking employment.
[6] Vulnerable employment is unpaid family workers and own-account workers as % of total employment.

one has to be cautious with this trend and put it in perspective, since young people (age 15 to 24) are still more than five times more likely to be unemployed than older workers (25 and older) (ILO, 2012). In 2008 almost a quarter (23.3 %) of the youth was unemployed.

Still, one has to take under consideration the labor participation rate of youth in order to fully grasp the potential impact of these numbers. According to the ILO, due to the improvement of the overall income situation in recent years, more and more young Indonesians complete their secondary education and are able to pursue even a tertiary education, thereby causing a reduction of the labor participation rate to less than 50 %. Meanwhile, it is important to note that this means one out of ten young Indonesians is neither in employment nor in education. As a consequence, the youth might not only be more vulnerable to food insecurity, but they also constitute a pool of unsatisfied, unhappy and potentially disenfranchised young people. This finding is also in accordance with the results of a study by sociologist Jack Goldstone (1982, p. 199) from Northwestern University, who identified the high cost of food and the lack of employment as the two main causes of revolutionary urban tumults. In a similar vein, scholar Henrik Urdal (2006) demonstrated that a lack of employment opportunities for youth might contribute to political instability.

Access to food not only depends on employment and thereby a secured income, but also on the level of poverty. Employment does not per se guarantee a sufficient standard of living, and vice-versa unemployment does not necessarily lead to immediate poverty. Focusing on urban areas where the majority of protests and riots occurred in 2008, World Bank Data suggest that poverty is in decline. In 2005, 13.5 % of urban population was living below the national urban poverty line. Since then the number has been continuously reduced, and while in 2008 11.6 % urbanites were still living in poverty, it decreased in 2010 to 9.9 % (World Bank Data)t. This trend suggests that despite

increasing urbanization in Indonesia and price inflation, urban poverty is in a steady retreat.

Individuals in developing countries can be severely affected by price fluctuations since many of them spend a large proportion of their income on food consumption, thus high food inflation and lagging wage increases have had an impoverishing effect on them (PDPE Market Analysis Tool: Terms of Trade). In the case of Indonesia, inflation rates considerably fluctuated between 2006 and 2010 due to global shocks, which had a strong impact on the purchasing power of wages. The world food (and fuel) crisis pushed up food (and fuel) prices in 2007 and 2008, which was followed by a price decline due to the global financial crisis that erupted in the United States and quickly spread to Europe and the globe.

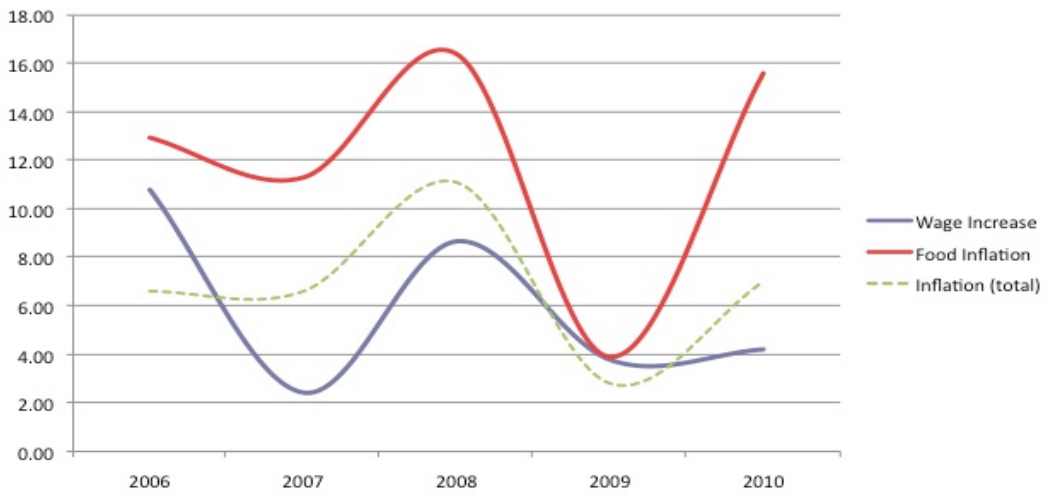

Figure 9: Indonesia: Inflation and wages of unskilled labor (%), 2006 – 2010; Source: compiled by the author based on graphs and data by ILO;

Between 2006 and 2010, Indonesia suffered from two-digit food price inflation (with the single exception of 2009) and overall inflation peaked at 11.10 % in 2008. At the same time wage increases were lagging behind the overall inflation (except for 2009 again), therefore causing a reduction in purchasing power (International Labour Organization, 2012). Using the average national wage increase of unskilled labor as a benchmark,

Figure 9 illustrates the impoverishing effect of high inflation in combination with low wage increases.

Another important measure that provides information on the purchasing power of individuals is the terms of trade. In this case, terms of trade (ToT) are defined as the ratio of daily wage for unskilled labor to the price of a food staple.[7] ToT provides information on the purchasing capacity of individuals to buy rice and on the variation of this capacity over time (PDPE Market Analysis Tool: Terms of Trade). Figure 10 shows that in 2008, ToT of unskilled workers have been relatively stagnant throughout the year. However, in the first months of the year, ToT figures were rising, but they dropped sharply in May, declining to the level of February 2008. This reduction in purchasing power also correlates with numbers of protests reported in Indonesia in May 2008.

[7] ToT is calculated for industry sector worker below supervisory level (national average) and minimum wage worker (Jakarta), based on the assumption of 20 working days per month. Rice is the main staple food produced and consumed throughout the country.

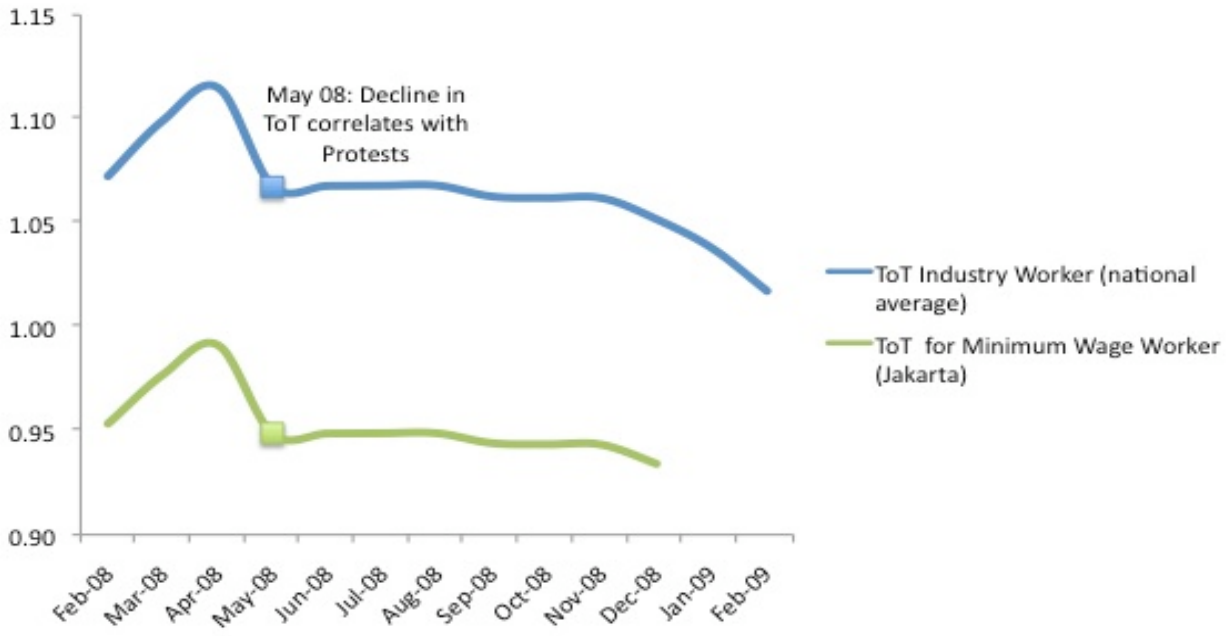

Figure 10: Indonesia: Terms of Trade (working day / x kg of rice), 2008; Source: compiled by the author based on data from Ministry of Energy and Mineral Resources and Badan Pusak Statistik;

Lastly, one also has to take into consideration the share of food commodity of per capita expenditures. The higher the share of total expenditures on food, the greater likelihood an individual will be affected by price increases. In 2002, 58.47 % of average monthly per capita expenditures were related to food commodity. Since then the number has decreased to 50.17 % in 2008 and 49.45 % in 2011, largely due to a reduction of the share of cereals expenditures during the same period.

Utilization

Official data suggest that in 2005 almost one quarter (24.4 %) of children under age five in Indonesia were malnourished. This number has declined to 19.6 % in 2007 and 17.5 % in 2010 (World Bank Data). However, it has been reported that "*dozens of Indonesian children under five died of malnutrition in the first six months of 2008, according to the health authorities, although no accurate figure can be determined*" (IRIN, 2008). Moreover, according to WFP "*13 million children in Indonesia suffer from malnutrition. In some Indonesian districts about 50 % of infants and young children are*

underweight" (IRIN, 2008). Nevertheless, even though malnutrition is widespread, its prevalence is more severe in rural areas and towns than in main cities like Bandung and Jakarta (World Food Programme, 2008). However, due to the lack of information and time-series, it is not possible to analyze possible relationships between nutritional status and the impact of the world food crisis 2008.

Stability

According to the FAO, evidence exists that surges in food imports have the potential to disrupt local markets, with negative effects on prices, production and food security (Nigris, 2005). In Indonesia, import surges of rice occurred almost as regular as sharp declines in imports. However, overall rice imports were declining from 2000 to 2010, and import surges could only be identified for the years 2003 and 2007. To be certain, surges occurred, albeit in the case of Indonesia the impact of import volatility on food availability has to be considered marginal.

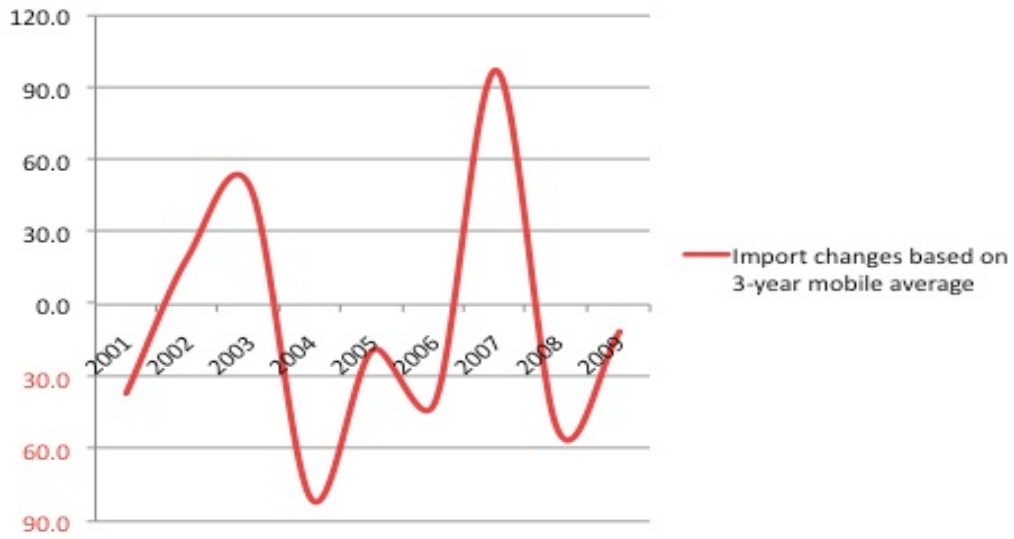

Figure 11: Indonesia: Import changes based on a 3-year mobile average. An important surge is defined as positive 30 % deviation from the 3-year mobile average; Source: compiled by the author based on own calculations;

From 2003 to mid 2008, international prices of a wide range of commodities have surged upward in dramatic fashion: the international prices of corn and wheat roughly

doubled, while rice prices tripled in a matter of months rather than years (FAO Data). However, there was no transmission of this price shock to the consumer level in Indonesia. From February 2008 to February 2009 correlations between the international prices (in USD) and the domestic retail prices (in USD) for the main staples rice (r=0.75) and wheat (r=0.51) seem to be rather modest.

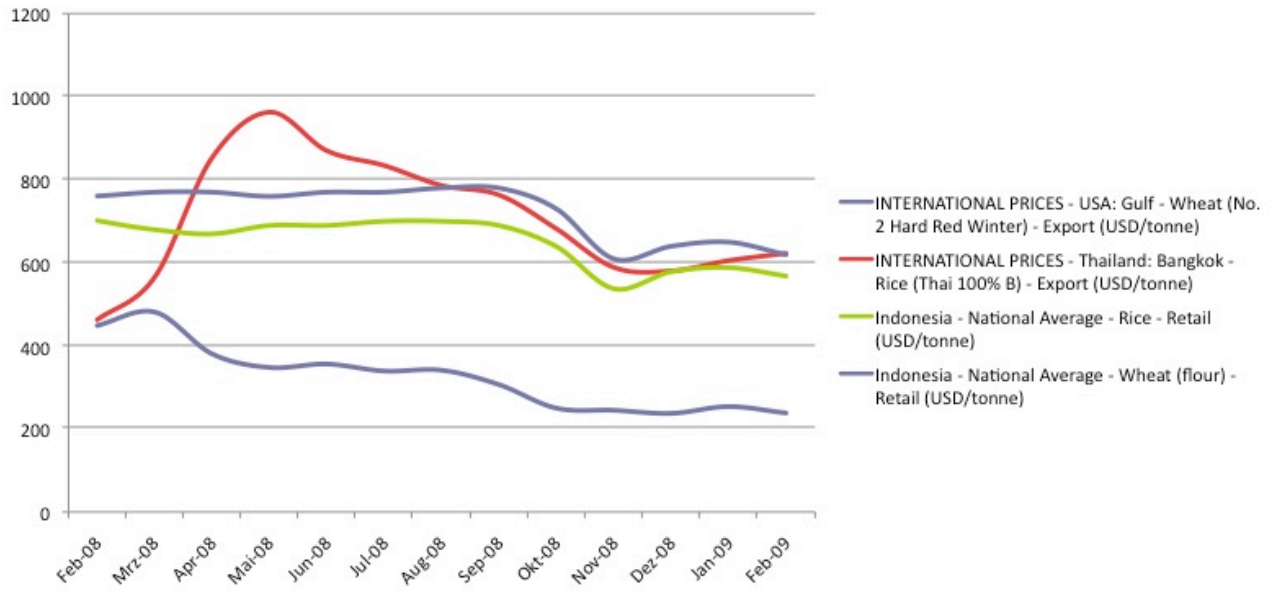

Figure 11: Global and domestic prices for main staples in 2008; Source: compiled by the author based on own calculations;

Nevertheless, comparing export prices with domestic retail prices in USD bears the risk of overlooking currency effects. The development of retail prices of rice and wheat expressed in local currency shows that prices for the main staples remained quite stable over this period and only increased slightly by 5 % over the total period.

Maintaining food security – narrowly defined as stable and low prices of cereals – has been a main concern of every Indonesian government since independence. Especially keeping the price of rice, the main staple, under control has been a politically sensitive issue. In Indonesia rice is not only a consumer good, but above all rice is strategic commodity, since it constitutes the staple food of most Indonesian people.

"*High rice prices and food riots were symptomatic of the economic malaise of the Sukarno government's later years in power. Recognizing the political importance of low and stable rice prices for winning urban support for the new regime, Suharto made rice price stabilization a major priority of the government*" (Dodge & Gemessa, 2012, p. 4).

Nevertheless, during the Asian financial crisis in 1998, prices got out of control and social unrest linked to food riots led to the fall of Suharto. High global prices and a year-over-year increase of 25 % in rice prices in 2008 caused fear of similar events. Bayu Krisnamurti, deputy minister for agriculture, commented:

"*In 1965 we faced a very, very depressing situation of social unrest.* […] *In 1998 we had a similar situation and we hope in 2008 it's not another situation like that because the cost to the economy is too high*" (Murray, 2008).

Therefore, several policies were implemented to keep prices under control and to avoid food riots like in the past. Import duties and VAT for wheat and wheat flour were lifted (Murray, 2008), import duties for rice reduced from 550 rupiah to 450 rupiah per kilogram (Asmarani, 2008) and rice exports restricted (Timmer, 2010a). In addition, social programs were extended. 19.1 million families became eligible to buy 15 kg of subsidized rice a month for a price of 1,600 rupiah, up from 15.8 million families allowed to buy 10 kg a month for 1,000 rupiah in 2007 (Aglionby, 2008a).

In summary, due to the government's strict trade regulation and subsidies, retail prices of the main staples rice and wheat remained fairly stable throughout 2008, and consequently H_2,[8] which asserted that high global food prices in 2007/2008 led to high levels of food insecurity in Indonesia, cannot be confirmed. However, one needs to recall that price inflations of soybeans and tofu had led to social unrest in early 2008 and that

[8] H_2: High global food prices in 2007/2008 led to high levels of food insecurity in Indonesia.

even protests over the price of beef had been reported (Grigg, 2008; Murray, 2008). This, however, should not be characterized as triggered by food insecurity, since neither soybean products nor beef are main staples in Indonesia. As a result, there is not sufficient evidence to confirm H_N,[9] which assumed that high levels of food insecurity led to frustration, thus triggering social unrest in Indonesia in 2008.

Social unrest in early 2008, while explicitly related to food prices, can be best interpreted through the lenses of relative deprivation. The street vendors taking to the streets of Jakarta in January 2008 were not threatened by acute, transitory or chronic food insecurity, rather their protests must be understood as a reaction to grievances such as real income erosion behind the background of an overall improvement of living conditions in Indonesia in the preceding years. This interpretation is also in accordance with Walton's (2001, p. 316) observation that urban grievances, such as rapid reduction in the standard of living, prices increases, inflation and unemployment, are the most common precipitants of social unrest. Thus empirical evidence lends support to H_A,[10] which asserted that social unrest in Indonesia in 2008 correlated strongly with the intensity and scope of frustration among members of society.

Analysis of Fuel Prices in Indonesia in 2008

To be sure, food prices seem to be the main factor contributing to peaceful protests in early 2008 in Indonesia. However, from May to July 2008 violent social unrest erupted in major cites. Analysis suggests that the increase in global fuel prices has been the main causal factor for those riots.

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[9] H_N: High levels of food insecurity led to frustration, thus triggering social unrest in Indonesia in 2008.

[10] H_A: Social unrest in Indonesia in 2008 correlated strongly with the intensity and scope of frustration among the population.

Indonesia subsidizes fuel for consumers in form of under-pricing of several energy products, including gasoline, kerosene, LPG and diesel (Mourougane, 2010). Subsidies were introduced in Indonesia for social considerations to make available a basic need at a price affordable to the poor. In 2008, fuel subsidies were high in international standards (Mourougane, 2010, p. 6). However, international crude oil prices had risen fourfold from 2003 to 2008, and so had the Indonesian Crude Price Index. These increases in world crude oil prices put budgetary pressures on the Indonesian government, since state expenditures for controlling fuel prices exceeded investments in education, healthcare and law and order (Agustina et al., 2008). When prices for crude oil hit 135 USD per barrel on 22 May, the Indonesian government, which had drafted its budget on the assumption of 95 USD per barrel, needed to take action to keep its budget in check (Karmini, 2008).

Consequently, the government increased gasoline and diesel prices by nearly 30 % in May and then in July it raised LPG prices by 23 %, which triggered fuel riots in many Indonesian cities since "*higher energy prices result in higher production costs for a range of goods and services which use fuel such as manufactured goods, food, and transportation services though this impact is difficult to quantify*" (Baker J. L., 2008, p. 1).

In order ease the burden on low-income households, compensation programs in the form of cash transfers were introduced. Using savings from the subsidy cut, the government started to give out 10 USD a month to around 19 million families for the next 1 1/2 years (Karmini, 2008). Also, Indonesia left the Organisation of the Petroleum Exporting Countries (OPEC) after 46 years of membership on 28 May, since the other twelve OPEC members refused to take measures to reduce the price of crude oil (Aglionby, 2008b). However, following the drop in world oil prices, in December 2008 the Indonesian government reduced retail prices of gasoline and diesel (Mourougane, 2010, p. 8).

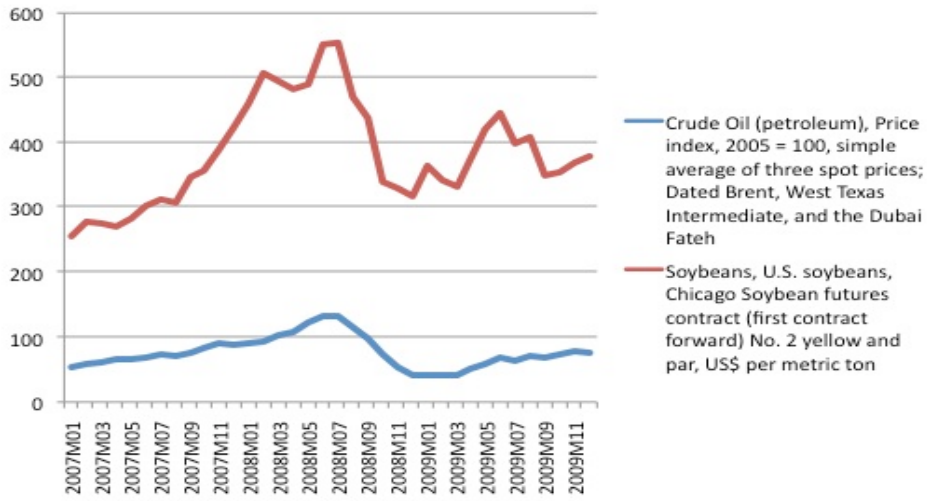

Figure 12: Global Crude Oil Price Index and Soyabean Prices ; Source: compiled by the author based on data from IMF;

Furthermore, global fuel prices not only caused fuel riots from May to July, but were also the main causal factor for the soybean protests in early 2008. Due to the rising global oil prices and in order to reduce its dependency on oil imports from the Middle East, the US government subsidized ethanol, which is mainly produced from corn. This biofuel policy had the consequences that less soybeans and more corn were planted in the USA, increasing the US corn crop by 25 per cent in 2007 (Grigg, 2008).

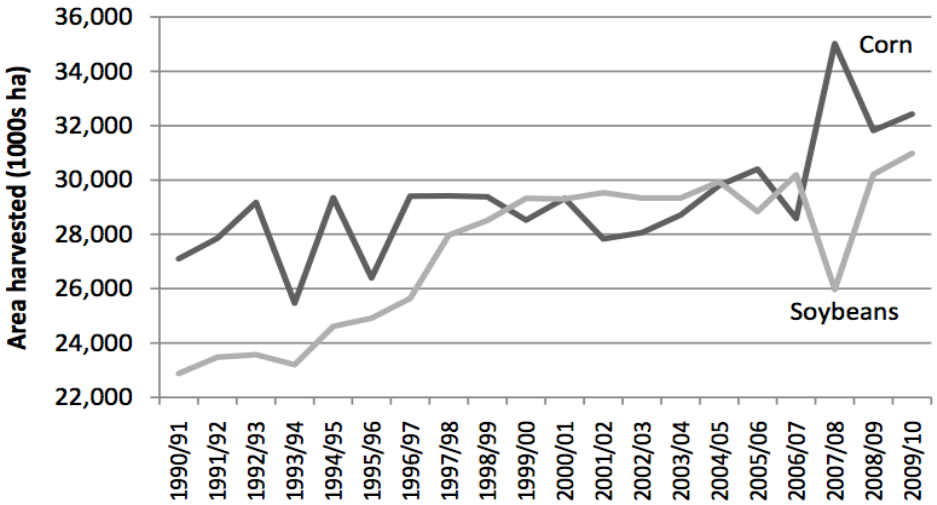

Figure 13: Trends in harvested areas for U.S. corn and soybeans: 1990-2009; Source: Heady, 2010, p. 23;

Consequently, there was a lessened supply of soybeans while at the same time global demand was increasing, causing higher global prices of soybeans.[11] Lower production in the USA, triggered by ethanol subsidies, was therefore the main cause for the shortage and high price of soybeans in Indonesia in early 2008.

CHAPTER FIVE: Conclusion

Did food insecurity cause social unrest in Indonesia in 2008? The results in this paper indicate that the answer is a qualified "no". It is a correct observation that peaceful protests in early 2008 were explicitly related to food, especially to the price of soybeans. However, soybeans are neither a main staple in Indonesia, nor were the urban protestors threatened by acute or transitory food insecurity. Furthermore, a careful and thorough analysis of quantitative macro data showed that overall the level of food security had not significantly deteriorated throughout 2008. Food insecurity was kept under control by the government due to social programs and policies aiming at self-sufficiency. Thus, no empirical evidence exists that could establish a correlation or causal relationship between food insecurity and the onset of social unrest in Indonesia in 2008.

The protests that erupted from May to July 2008 made no reference to food related grievances. Those demonstrations and riots were clearly linked to an increase in fuel prices and a simultaneous cut in domestic fuel subsidies. Socials unrest could only be curbed when the Indonesian government introduced compensation programs to ease the burden of the fuel price increases.

The implications of these findings are fivefold. First, they underscore the need to provide micro foundation for global concepts such as the neo-Malthusian nexus between food insecurity and social unrest. High global food prices are not necessarily and directly

[11] Between January 2007 and December 2009, correlation between global crude oil price index and soybean prices was r=0.8.

transmitted into domestic markets. Furthermore, as the example of Indonesia demonstrated, urban dwellers are often those who protest. However, in developing countries it is the rural population that is most at risk of food insecurity. Quantitative, large-N studies – by focusing on macroeconomic aggregate data – have thus failed to provide valid descriptions and explanations of the causal mechanisms that allegedly link food prices (and food insecurity) with social unrest.

Second, the findings highlighted the need for more in-depth case studies, focusing on single countries or regions and using a mix of qualitative and quantitative data and techniques in order to explore and explain the phenomena of social unrest in the context of globalization.

Third, the empirical findings indicate that social unrest was caused by grievances that were arising out of an unfavorable comparison between the status quo ante or certain expectations on the one hand, and social reality on the other hand. Thus, this research demonstrated that the relative deprivation model has a high explanatory power in explaining the eruption of social unrest. No single factor, such as food price increases or food insecurity, can determine social unrest, since the causes and triggers for social action are manifold. Temporal changes in living conditions – due to such diverse causes such as decreasing real income due to high food and fuel prices – can cause a sense of relative deprivation. The research findings thus also support the thesis that individuals are more likely to engage in social action such as protests and riots "*in the face of adverse shifts in absolute rather than in relative well-being*" (Hendrix, Haggard, & Magaloni, 2009, p. 7).

Fourth, important policy implications arise from the findings. On the global level, there is a need to regulate commodity future markets in order to put limits on the speculation with food – one of the main drivers of the 2008 world food crisis (Lagi et al., 2011). In addition, the nexus between biofuels and food security poses a dilemma to global governance: biofuel production makes gasoline cheaper and food more expensive.

Policies, such as the recent decision by the European Parliament to limit the use of biofuels in the European Union (Patnaude & Werber, 2013), might have a positive impact on global food security, but at the same time might also trigger increases in fuel prices. Since this research demonstrated that fuel price hikes are a source of social unrest, this policy will most likely have an adverse effect on international stability.

However, there are also salient policy implications for the domestic level. In order to uphold domestic stability, governments in developing countries faced with budgetary pressures need to abstain from shock therapies for their population. Expensive and unsustainable subsidies need to be progressively faded out (Cohen & Garrett, 2010). Furthermore, when developing policies, governments have to pay greater attention to the grievances of urban dwellers, since they constitute the main source of social upheaval.

Fifth, the research findings showed that social unrest in Indonesia during the world food crisis 2008 is best explained by peaks in global oil prices. The soybean protests in 2008 were caused by a decrease in soybean supply and subsequent price hikes. This was a direct consequence of high global fuel prices, which had made the cultivation of biofuel crops more lucrative than crops for food production. Episodes of social unrest in Indonesia between May and July were even directly and explicitly linked to fuel price increases in the domestic market. The research thus suggests that the global crude oil price index is a good predictor for the risk of social unrest. Nevertheless, more rigorous and comparative studies need to be conducted.

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