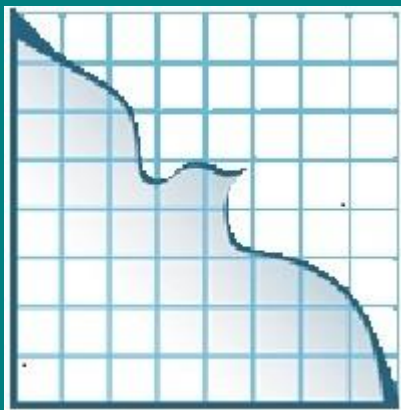


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Historical origins of land rights insecurity and implications for conflict in Thailand

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Abstract

This article explores the historical origins of land rights insecurity and its implications for landlessness, poverty, and contemporary conflict in Thailand. The Siamese (now Thai) government adopted the Torrens system of land administration in 1901 as part of a larger strategy to curb colonial territorial expansion in Southeast Asia. Although the Torrens system is generally associated with strong property rights, its incomplete and uneven adoption led to widespread and long-running land rights insecurity and landlessness. This article presents two case studies that demonstrate these consequences. First, the expropriation of land through the exploitation of ambiguous land rights and the implementation of new land laws. Second, the long-run associations between land rights insecurity, low levels of productive investments in agriculture, and poverty. Consequent landlessness and poverty in agricultural communities have, in turn, led to recent protests and violence in Thailand.

On July 13, 1893, three French gunboats sailed past the Paknam fortress and continued up the Chao Phraya River to Bangkok. The ensuing skirmish between the French gunboats and Siamese land and naval defenses resulted in several French casualties. The French made demands for reparations, including the secession of territories that make up present-day Laos and Cambodia. The “Paknam Incident” was the culmination of growing tensions and sporadic armed clashes between French and Siamese forces over contested areas on Siam’s eastern frontier. The massive territorial losses that resulted from the Paknam Incident reparations and the recognition that Siam could not match the military power of the French and British colonists became the catalyst for King Chulalongkorn to implement a multi-pronged approach to establish and maintain Siam’s sovereignty. The approaches included centralizing the Siamese government, diplomacy, the establishment of Western-style territorial borders, and the adoption of several Western institutions in order to gain international legitimacy.¹

This article considers the last of these strategies. In

particular, we argue that the 1901 Land Title Deed Act adoption of the Torrens system of land administration, as a strategic response to threats to sovereignty, has had long-run implications for landlessness, smallholder agricultural investments, rural poverty, and contemporary conflict. This article builds upon previous work on historical legacies of adopting colonial institutions on modern economic outcomes. Although never directly colonized, it was the bid for international legitimacy that led the Siamese government to adopt certain Western colonial institutions.²

The traditional land rights system limited landholdings and encouraged smallholder landownership and cultivation. In contrast the 1901 adopted Western land rights system allowed for accumulation and concentration of land. However, the uneven implementation of the new land law left many households, who had secure rights under the traditional land rights system, without any clear rights after 1901. This ambiguity led to many landowners losing their land to wealthy individuals, politically powerful actors, and even the Thai government. Furthermore, ambiguous and

insecure land rights disincentivized smallholders from making costly productive agricultural investments. This situation has led to present-day landlessness, rural poverty, and conflict.

This article begins by providing an overview of the historical connection between national security, the adoption of a Western land code, and resulting widespread land rights insecurity. It then presents two illustrative case studies. The first demonstrates landlessness resulting from the exploitation of ambiguous land rights. The second illustrates the long-run negative effects of land rights insecurity upon productive investments in agriculture. The article concludes with a discussion about the connections between historical national security, land rights insecurity, and poverty—plus their implications for recent conflict.

Historical background

In the second half of the nineteenth century, the British and French progressively annexed the majority of mainland Southeast Asia. The governance structure of Siam (now Thailand) was a decentralized “mandala” state. A mandala state is characterized by the existence of independent kingdoms that are defined by their span of control over people, not territorial borders. Smaller states would have their own hereditary leaders, taxation, and laws but often paid tribute in the form of taxes or manpower to more powerful mandala polities in the region. Bangkok was one of the primary mandala centers in Southeast Asia during the second half of the nineteenth century with direct control over *muang* (small principalities) close to Siam’s central region, and varying degrees of indirect control over areas further afield.³

The decentralized nature of the mandala polity system proved to be a weakness in the face of British and French territorial expansion. The Europeans conceptualized control in terms of territory that could be depicted on a map, whereas control for the Siamese government was conceptualized as the span of control over people and resources. These different conceptualizations of control came into conflict. Without demarcated borders, the French and British progressively annexed physically

In the face of colonial threat, Thailand adopted a Western land titling system to provide international legitimacy for the Kingdom’s borders and interior. Land titling activities slowed significantly after 1909 and remains incomplete, leaving many with land rights insecurity. Poverty and conflict effects are still being felt today.

distant kingdoms that were in tributary relationships with Bangkok and increasingly engaged in frontier conflicts with Siamese troops.⁴

In a bid to curb colonial interests in the region, and establish Western style sovereignty, the Siamese government pursued a diverse set of strategic policies, including the promulgation of the 1901 Land Title Deed Act. The Act resulted in the adoption of the Torrens system of land administration with land titling based on cadastral surveys. The Siamese government adopted this Western land code both as a tool to establish Siam’s international legitimacy as a modern nation, and also as a tool to limit colonial influence within Siam. In 1885, Britain’s Bowring Treaty with Siam, and subsequent comparable treaties with other foreign powers, guaranteed extraterritorial rights to foreign residents residing within Siam’s territory. This posed a significant problem for the Siamese government, since many residents in areas under Bangkok’s influence claimed connections with kingdoms annexed by the British and French. This meant that land claims by “alien Asiatics” under Siam’s traditional land rights system fell under foreign legal jurisdiction, effectively allowing the French and British to colonize Siam from within. The adoption of an internationally recognized Western land code accomplished two things: First, it made it difficult for foreign powers to refute ownership rights for individuals who now possessed land title deeds issued under an international standard; and second, it allowed the Siamese government to better control landownership by preventing land registration by foreign nationals.⁵

Siam’s traditional land rights prior to 1901 were based on rights of usufruct. Households were free to claim unused land for cultivation. Once a household could prove to the government that they had made the land productive, the government would then issue a land deed that served as both an ownership document and a

tax document. The household would retain rights to the land as long as they continued to cultivate the plot and paid annual taxes to the government. Land rights under the traditional system were secure and often upheld in court. Since the size of land claims were limited by how much households could comfortably cultivate, the land rights institutions in the nineteenth century resulted in a pattern of smallholder agriculture with many landowners holding modest-sized plots. There were few legal avenues under the traditional land rights system to make larger land claims and engage in plantation agriculture.⁶

The land rights bestowed on landowners after 1901 differed from traditional land rights in an important way. Land no longer needed to be utilized in the specific activities stated on the land deeds. For example, under the traditional land rights system, a landowner who was issued an orchard deed must utilize their land as an orchard, or else the landowner would risk competing claims by third parties or expropriation by the government. Deeds issued after 1901 under the Western land rights system guaranteed fully alienable rights with no land use restrictions. Thus, under the new system, a buyer could acquire unlimited (deeded) property within the land market. In the early twentieth century, the Government and government advisors expressed concerns that the new land laws would open up the possibility of foreign corporate land grabs that could potentially lead to the demise of Siam's smallholder agricultural economy. These concerns led to restrictions on new claims of unoccupied lands, but accumulation of land could still be achieved through the land market. Evidence of land accumulation through the market mechanism can be seen in Bangkok in the years immediately after the promulgation of the 1901 law. In a sample of over 10,000 orchard land deeds issued in Bangkok in the 1880s, 1,287 properties recorded transfers to new non-institutional owners between 1884 and 1909. Twenty percent of property owners for land purchased before the implementation of the 1901 law acquired more than one property. In contrast, 33 percent of owners who bought properties after 1901 acquired more than one, with one owner accumulating a total of 12 properties.⁷

After 1901, the Siamese government made a concerted effort to implement the law. Between 1901 and 1909, the government established 11 land offices (nine in the central region and two in the north) and was highly active in cadastral surveying, land registration, and issuing title deeds. Cadastral survey and land titling activities slowed significantly after 1909, coinciding with the decline of the colonial threat in the region following the 1909 treaty with Great Britain. It remained slow until the 1970s. It is argued that Siam's failure to complete the land registration process across Thailand was the product of insufficient state capacity at the central level and, given that property rights enforcement and land tax collection on *unregistered* land occurred at the local level, that there were few incentives for local officials to encourage land registration. By the mid-twentieth century most land in Thailand still remained untitled, despite the fact that full ownership rights could now only be bestowed following a survey and registration with the central land registry. In fact, only 12 percent of land had full title deeds and 65 percent had no documentation (i.e., tax receipts) at all. Furthermore, by 1970, less than 5 percent of all land had been surveyed in areas outside of central Thailand, meaning that most of the country continued to have ambiguous land rights.

In all, the ability to accumulate land under the Western land code coupled with widespread land rights insecurity (stemming from the incomplete implementation of the land law), laid the foundation for land loss and disincentivized smallholders from making productive land investments. These processes are illustrated in the two case studies below.⁸

Case study 1: Exploitation of ambiguous land rights in Nakhon Nayok

The lack of central government capacity and the complexity of registering land meant that most land occupants were unable to acquire new survey-based title deeds. Landowners unable to secure proper land registration were at risk of losing their land claims due to insufficient documentation. The following early twentieth-century case between the people of Nakhon Nayok province and the Siam Canals, Lands and

Irrigation Company emphasizes the risk of land loss for such landowners.⁹

The case began in 1916 when the people from two districts in Nakhon Nayok province filed a complaint with the Ministry of Agriculture. The complaint alleged that local government authorities, along with individuals associated with the Siam Canals, Lands and Irrigation Company, ejected many households from their land and prevented people from having any further access to their property. During the investigation, multiple individuals stated that they had been farming their respective land plots for a decade or more and had always paid their yearly land taxes to the local government authority (this was later corroborated by the village headmen). The company dug canals in the area and demarcated plots of land in the canal's vicinity at the beginning of the project. At the conclusion of the canal construction, they did not conduct any further work or maintenance on the canals and the farmers continued to cultivate their land as they always had. However, a decade later, the company returned to demand rent from farmers.¹⁰

The company's land claims were based on the conditions of the original contract signed with the government in 1904. Two provisions led to the land dispute with the Nakhon Nayok community. First, the government granted the company unoccupied land up to 1.6 kilometers on either side of the canal. Second, where land was already occupied, the company could not displace the original occupants, but could charge a fee of THB 4 per *rai* (1,600 square meters) for digging the irrigation canal. These conditions, guaranteeing future income through land sales and fees, were included as enticements to invest in the irrigation canal project.

The problem facing the farmers in 1916 was proving that they occupied the land at the time the company signed its contract with the government. Under the traditional land rights system, occupancy and cultivation for a period of time were sufficient to establish land rights. After 1901, proof of ownership required land registration, but the government had failed to survey and issue title deeds to the occupants of Nakhon Nayok. Taking advantage of the farmers' land rights insecurity, the company evicted them from their farmland in order

to resell the land.

In this example we see how the ineffectual implementation of the 1901 Land Title Deed Act failed to provide its intended secure land rights. Instead it caused land rights insecurity and landlessness for many farmers—a situation exploited by both private and state actors.

The following case study develops this by considering the implications of land rights insecurity on agricultural investment.

Case study 2: Agricultural land investments under land rights insecurity

The progress of surveys and the issuance of land deeds post-1909 was slow and occurred mostly in places that were in close proximity to existing land offices—leaving the majority of Thailand's agricultural land insecure and without official title throughout the twentieth century. In consequence, agriculturists who perceive their land rights as insecure tend to make fewer productivity-enhancing investments. This in turn has negative implications for agricultural output and income for farm households.¹¹

Historically in Thailand, the traditional usufruct land rights were perceived as secure and encouraged significant long-term investments during the nineteenth century, such as in orchard crops (particularly among women). Following the ownership uncertainties created by the incomplete implementation of the 1901 land code, a program known as SPK4-01 was instigated in 1975. This program issued partial land rights deeds and was followed by observable increases in productive investments in agricultural land.¹²

To demonstrate the long-running negative relationship between productive agricultural investments and land rights insecurity (stemming from the uneven and incomplete implementation of the 1901 land code), the authors analyzed behavior in 1965 (i.e., prior to SPK4-01). The details of this analysis can be found in Appendix A. In short, distance from early land offices was used as a proxy for the likelihood of having title, and irrigation as a proxy for productive agricultural investment. The analysis indicated that:

- ▶ In the central region of Thailand, for every 10 kilometers further a district is located from an early land office, the proportion of agricultural land that is irrigated drops by 1.6 percent.
- ▶ Districts in the central region located further away from early land offices have smaller average landholdings.

This negative correlation between land rights insecurity/ability to accumulate larger landholdings and agricultural investment clearly implies negative implications for agricultural earnings and the welfare of those reliant upon them.

Long-run implications for poverty and land-related conflicts

The case studies presented above demonstrate how the uneven and incomplete implementation of the Western land code has led to land loss and dampened agricultural investments in areas that were largely excluded from early land titling activities. Increasing landlessness and growing economic difficulties stemming from land rights insecurity that has its origins in colonial-era land laws has potentially led to higher levels of poverty in areas excluded from land titling activities and, ultimately, incidents of unrest.

The regression results summarized in the previous section (and detailed in Appendix A) suggest lower levels of agricultural investments in areas that were less likely to gain land titles. Taking this result to its logical end, one would expect higher levels of rural poverty in areas with fewer land titles. Through the analysis described in Appendix B, this article shows that, indeed, on average rural poverty today is 0.2 percentage points higher for every 10 kilometers further a district is located from an early land office.

Given the relationship between land rights and poverty, it is not surprising that there have been several incidents of unrest and violence related to land rights in recent decades. For example, in 1974, thousands of farmers from the north and central regions organized a march to Bangkok demanding that the government address persistent issues of landlessness, high

agricultural land rents, and a poor agricultural market. Although the government responded to the protesters by introducing price and rent controls, the measures were not fully implemented and the root causes of farmers' difficulties were not addressed.¹³

A second example illustrates conflict stemming from land appropriation through the exploitation of ambiguous land rights. Landless villagers in Buriram Province (400 kilometers northeast of Bangkok) were granted cleared forest land by the government in exchange for their cooperation during the communist insurgency in the 1970s. However, the government never granted formal land titles to the villagers, leaving their land rights unclear. In absence of documentation, the villagers were forced off the land to make way for a private company to commercially cultivate eucalyptus trees under a concession awarded by the government in the 1980s. After multiple clashes between the villagers and the local government, as well as sabotage of the commercial plantations, a group of 4,500 individuals marched to Bangkok to demand justice—eventually leading the government to suspend the eucalyptus program in 1992.¹⁴

The following final example demonstrates the complexities of solving the problem and the violence that can erupt. The Klong Sai Pattana community in Surat Thani sued Jiew Kang Jue Pattana Co Ltd palm oil company in 2005 for illegal trespassing and land encroachment upon the community. The company lost the case at both the provincial and supreme courts in 2007 and 2014. During this period, four people were murdered and others injured by gun violence linked to the dispute. After the success of the first court case, hundreds of landless farmers promised land allotments settled on the disputed land, began to build houses, and grow small crops. However, the stage was set for continuing disputes and violence when, in 2016, the Agricultural Land Reform Office decided to redistribute the land to landless individuals who had registered for land allocations in Surat Thani. Without proper land registration, the villagers who had won the court battle now faced eviction again. To date, the case has not been resolved.¹⁵

Conclusion

This article explores Siam's adoption of a Western land code as part of a strategy to establish sovereignty under the threat of French and British colonization, and its implications for long-run land rights insecurity, contemporary poverty, and conflicts over land in Thailand. The promulgation of the 1901 Land Title Deed Act introduced the prospect for landowners to accumulate large tracts of land—something impossible under the traditional land rights system. However, the incomplete implementation of the 1901 law introduced land rights insecurity to households who were not issued title deeds for their land. This left them vulnerable to land loss and less likely to make productive agricultural investments. Such issues have led to economic hardship and inevitably triggered conflict and violence that continues to this day.

Various Thai government regimes have recognized the problems of landlessness and economic hardships facing agricultural households as a result of land rights insecurity. Several policies have been proposed and implemented to remedy problems caused by incomplete land titling in Thailand, including the introduction of partial land rights (SPK4-01) in the 1970s, rent controls, and community land rights schemes. There is evidence that these schemes have positive outcomes for the targeted agricultural communities *where these schemes are applied*. However, the problem of widespread landlessness and land rights insecurity persists, and renege promises concerning land rights across administrations continue to be a problem. It is now over a century since the colonial threat passed, yet its mitigation has led to conflict ever since, which, without a solution, will likely continue.¹⁶

Notes

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Department of Community Development, Ministry of Interior and The Institute for Policy Assessment and Design, University of the Thai Chamber of Commerce, for providing access to the National Rural Development Survey.

1. Present day: Terwiel (2005, p. 212). Centralizing: Bunnag (1977); Paik and Vechbanyongratana (2019). Diplomacy: Jeshurun (1970). Borders: Winichakul (1994). Institutions: Larsson (2012).

2. Torrens: Under the Torrens system, ownership is based on a cadastral survey and land title recorded in a central land registry. The “title deed” is a document issued by the government that refers to a plot's registration in the registry, but does not act as proof of ownership on its own. In this article, possession of title deeds refers to complete registration in the central land registry. Previous work: The seminal paper by Acemoglu, Johnson, and Robinson (2001) shows that weak property rights institutions introduced by colonizers have had long-run negative effects on the economic development of former colonies. In the same vein, Nunn (2007) develops a theoretical model that shows that extractive activities accompanied by weak property rights enforcement under colonial rule can lead to a constant state of low production in the post-colonial period. Empirical work by Bertocchi and Canova (2002) on post-colonial economic growth in Africa is consistent with Nunn's model predictions. A directly related micro-level study by Banerjee and Iyer (2005) finds that land institutions established in India by the colonial government favoring landlords over smallholders had negative effects on agricultural investments and output, as well as negative long-run implications for education and health. Similar to Banerjee and Iyer (2005), the Western land rights institutions adopted in 1901 represent a structural break from traditional land rights institutions, potentially having long-run implications on Thailand's economy. Legitimacy: Larsson (2012).

3. Tambiah (1977); Wolters (1999).

4. Winichakul (1994).

5. Larsson (2007; 2012). In fact, the land title deeds issued after 1901 explicitly state that landowners are “subjects of Siam”.

6. Traditional system: Chankrajang and Vechbanyongratana (2017; n.d.). Plantation agriculture: Feeny (1982).

7. Land grabs: Larsson (2007, pp.789–797). Orchards: Chankrajang and Vechbanyongratana (2017). Multiple

purchases: Authors' calculation based on the dataset used and described in Chankrajang and Vechbanyongratana (2017).

8. Efforts: Feeny (1982). Failure: Vandergeest and Paluso (1995). Titling: Ingram (1971). Documentation: Ingram (1971, p. 266); Feeny (1982, p. 97). Five percent: Vandergeest and Paluso (1995).

9. The case file is part of the document collection at the Department of Lands Museum under the Ministry of Interior in Bangkok, Thailand. The 268-page report details the "Thung Nakhon Nayok Project"—an irrigation canal project initiated by the Siam Canals, Lands and Irrigation Company in the province of Nakhon Nayok at the beginning of the twentieth century. The report consists of correspondence letters between experts, company officials, government officials, and official testimonies of villagers and village headmen. Nakhon Nayok province is located approximately 110 kilometers northeast of Bangkok.

10. Land tax receipts for taxes paid to the local government officials are often used as proof of landownership at the local level in the absence of government-issued land deeds. See Vandergeest and Paluso (1995).

11. 1909 treaty: Larsson (2012). Productivity: For example, Deininger and Jin (2006) find that perceived land security is associated with productivity enhancing land terracing in Ethiopia. Gavian and Fafchamps (1996) find that manuring is more prevalent on owned versus rented land in Niger. In an attempt to harmonize often conflicting results for West Africa, Fenske (2011) shows a general positive relationship across nine datasets between tenure security and fallowing and tree planting.

12. Usufruct: Chankrajang and Vechbanyongratana (n.d.). Investment: Feder et al. (1988); Chankrajang (2015).

13. Baker and Phongpaichit (2009).

14. Land grant: Dechalert (1999); Suspension: See Phongpaichit and Baker (1995).

15. Tang (2016),

16. For examples of positive outcomes Chankrajang (2015) and Chankrajang (2019).

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Appendix A: Analysis of prevalence of land title versus agricultural investment

We relate the prevalence of titled land to the magnitude of productive agricultural investments at the district level in 1965. The year 1965 is chosen because it is prior to a major change to the land law in 1975 that introduced partial land rights (SPK4-01) that provided households with land rights security (reduced expropriation risk), but did not allow for the sale or transfer of land. This is also the first year (to our knowledge) that district-level data is available on irrigated agricultural land (specifically the proportion of agricultural land within a district that is irrigated), which can be used as a proxy for productive agricultural investments across Thailand. While the government invested in several large-scale irrigation projects in the Central Plain in the late-nineteenth and early twentieth centuries, individual farmers still needed to cut smaller channels to join up with the canal ways or rivers. Thus, the percentage of agricultural land that is irrigated should largely capture average productive investments made by individual agriculturalists. Ideally one would compare agricultural investments before and after the implementation of the 1901 land law. However, since Thailand's territories were not fully brought under centralized control until 1915 (Bunnag 1977), systematic sub-national data covering the whole country are not available.

Unfortunately, 1960s land titling data at the district level is difficult if not impossible to obtain. In absence of direct measures of land titling, we use two historical facts to construct a proxy for the likelihood that land would be cadastral surveyed and granted a land deed. First, we know from Larsson (2012) that after 1909 cadastral survey and titling declined significantly and funding for land administration declined sharply. Also, Feeny (1982, p. 97) states (1982, p. 97), “[t]he land titling system...has not been successfully applied to all areas, but has been more successful in the area where it was first applied—the Central Plain”. Thus, we use a district's distance to the closest government land office established by 1909 as a proxy for the likelihood that a land deed would be issued for land in that district. The early government land offices include: Bangkok, Ayutthaya, Chonburi, Nakhon Chaisi, Chachoengsao, Prachinburi, Phichai, Phitsanulok, Supanburi, Lopburi, and Angthong (Feeny 1982, p. 97). With the exceptions of Phichai and Phitsanulok in the north, all early land offices were established in the central region, which was the area under direct political control of Bangkok at the turn of the twentieth century. Early land offices were not established in peripheral areas located in formerly autonomous tributary states.

We control for geographic factors that are normally associated with irrigation, including the prevalence of agriculture in the district, distance to the nearest river, elevation, and the standard deviation of elevation. We also control for variables correlated with market access, which can influence the decision to make productive agricultural investments, including population density, distance to the provincial capital, distance to the coast, and an indicator for railway access. With nine out of the 11 early land offices located in the central region, it is clear that the distribution of early land offices across Thailand is not random. In part this is due to the fact that the Bangkok government did not have direct control over many areas outside the Central Plain as late as 1915 (Bunnag 1977). Also, the central region close to Bangkok was primarily engaged in rice cultivation due to its favorable geography and climate combined with its greater integration with world markets. Feeny (1982) argues that the lucrative and growing rice export market in the second half of the nineteenth century resulted in demand for land rights by elites in the central region. Since selection is a concern, we run two additional specifications that (1) considers only provinces located in the central region, and (2) considers provinces located in the central region of Thailand that had early land offices. The central region includes the following provinces: Samut Prakan, Nonthaburi, Pathum Thani, Ayutthaya, Ang Thong, Lop Buri, Sing Buri, Chai Nat, Saraburi, Chon Buri, Rayong, Chanthaburi, Trat, Chachoengsao, Prachin Buri, Nakhon Nayok, Sa Kaeo, Ratchaburi, Kanchanaburi, Suphan Buri, Nakhon Pathom, Samut Sakhon, Samut Songkhram, Phetchaburi, and Prachuap Khiri Khan. Bangkok is excluded from the analysis. Summary statistics for the full and select samples are reported in Table A1.

In 1965, on average 36 percent of land in each district was used for agriculture in Thailand, of which 47 percent

was irrigated. As expected, the values for the rice-growing central region are higher than for the country as a whole: on average 59 percent of land in each district was used for agriculture, 56 percent of which was irrigated in each district. Also as expected, due to a lack of land offices established in peripheral areas under tenuous control by Bangkok, the average distance to a land office for the entire sample is 245 kilometers, compared to only 56 kilometers in the central region that was under direct Bangkok control at the turn of the twentieth century.

Table A1: Summary statistics

	<i>All Districts</i>	<i>Central Region</i>	<i>Provinces in Central Region with Early Land Offices</i>	<i>Sources</i>
Irrigated Agricultural Land (% of Total Agricultural Land)	46.842 (33.984)	56.386 (36.241)	64.475 (31.673)	NSO, USOM, DLA (1965)
Average Size of Agricultural Landholdings (Rai)	22.275 (13.294)	27.180 (9.525)	28.695 (8.486)	NSO, USOM, DLA (1965)
Distance to Closest Early Land Office (10s kms)	24.528 (21.997)	5.550 (5.704)	2.119 (1.431)	Feeny (1982); ICTC (n.d.)
Agricultural Land (% of Total District Land)	35.773 (28.627)	58.627 (33.88)	70.639 (31.757)	NSO, USOM, DLA (1965)
Distance to River (km 10s)	0.482 (0.516)	0.343 (0.378)	0.33 (0.415)	ICTC (n.d.)
Elevation (m)	192.950 (196.584)	67.795 (108.11)	35.781 (64.316)	ICTC (n.d.)
Standard Deviation of Elevation	89.465 (93.537)	54.367 (82.247)	27.398 (52.516)	ICTC (n.d.)
Population Density	95.251 (137.485)	149.966 (131.919)	162.382 (106.111)	NSO, USOM, DLA (1965)
Distance to provincial center (km)	10.361 (17.560)	6.057 (16.486)	4.707 (7.882)	ICTC (n.d.)
Distance to Coast (km 10s)	17.601 (13.404)	7.326 (5.304)	8.566 (4.607)	ICTC (n.d.)
Railway Indicator	0.283 (0.451)	0.379 (0.487)	0.344 (0.479)	Whyte (2010)
Observations	512	153	61	

Notes: The table reports means and standard deviations (in parentheses) for variables used in the regression analysis. Bangkok is excluded. NSO is National Statistical Office; USOM is United States Operations Mission; DLA is Department of Local Affairs; ICTC is Information and Communication Technology Center (Thailand).

To test the relationship between titled land (proxied by distance to the nearest early land office) and the share of agricultural land that was irrigated in a district, we run the following ordinary least squares (OLS) regression. Standard errors are clustered at the provincial level for the full sample. Robust standard errors are used for the select sample due to a small number of provincial clusters.

$$irrpc = \alpha_0 + \alpha_1 dist + A'\beta + M'\gamma + \varepsilon$$

The variable *irrpc* is the percentage of a district's agricultural land under irrigation, *dist* is the distance in kilometers to the nearest early land office, *A* is a vector of geographical variables related to irrigation, and *M* is a vector of variables that capture market access described above. The results are reported in Table A2.

The first specification includes all districts in Thailand. The coefficient estimate indicates that for every 10 kilometers further from a land office a district is located, the area of farmland that is irrigated is reduced by 0.29 percent. Due to Thailand's geographic and agricultural heterogeneity, many agricultural crops in peripheral parts of the country may have different irrigation needs. Also, as discussed above, the concentration of early land offices in the central region causes concern about selection. To address these concerns, we limit the sample to the central region in the second specification. By limiting the sample to the central region, the coefficient estimate for the distance to an early land office increases in magnitude to -1.6. This means that for every 10 kilometers further a district is located from a land office, the proportion of agricultural land that is irrigated drops by 1.6 percent. The mean distance from a land office is 55.5 kilometers, which translates to 8.9 percent less agricultural land under irrigation than a district with a land office. Finally, we look at only the eight provinces in the central region that had early land offices. Conditional on an early land office being established within the same province, a district located 10 kilometers from a land office on average has 11.5 percent less irrigated agricultural land.

In absence of direct measures of land titling, the negative relationship between the distance from a land office and irrigated agricultural land is suggestive that land rights insecurity is associated with lower levels of productive agricultural investment. This result is consistent with recent work by Chankrajang (2015) that finds a positive relationship between agricultural investments and the strengthening of land rights security through the SPK4-01 program introduced in 1975 and accelerated in the 1990s. The long-run negative correlation between land rights insecurity and productive agricultural investments has implications for agricultural earnings and welfare. Agriculturalists without land rights and few avenues to achieve secure rights will have fewer incentives to make productive investments, which in turn leads to lower productivity and output, putting farmers with ambiguous or insecure land rights at a perpetual earnings disadvantage.

Another potential mechanism for the observed relationship between close proximity to land offices and higher irrigation investments is through land accumulation and efficiencies that come with farming at a larger scale. As argued earlier, land accumulation and large-scale farming became possible in areas where land titles were issued. The 1965 district-level data from the agricultural census provides figures on average agricultural landholdings. Model 4 reported in Table A3 suggests that districts in the central region located further away from early land offices have smaller average landholdings. Likewise, the raw correlation (not reported) between average size of agricultural landholdings and the proportion of agricultural land under irrigation is positive, providing evidence of enhanced agricultural investments in areas where large-scale farming was possible in the mid-twentieth century.

Table A2: Proximity to early land offices and prevalence of irrigated farmland, and average agricultural holdings, 1965

	(1)	(2)	(3)	(4)
	<i>Dependent Variable: Irrigated Agricultural Land (% of Total Agricultural Land)</i>			<i>Dependent Variable: Average Size of Agricultural Landholdings (Rai)</i>
	<i>All Districts</i>	<i>Central Region</i>	<i>Central Region Provinces with Early Land Offices</i>	<i>Central Region</i>
Distance to Closest Early Land Office (10s kms)	-0.287*** (0.095)	-1.602*** (0.511)	-11.459*** (4.131)	-0.354*** (0.110)
Agricultural Land (% of Total District Land)	0.481*** (0.079)	0.406*** (0.076)	0.359*** (0.109)	0.094*** (0.023)
District Distance to River (km 10s)	-7.303*** (2.594)	-13.788** (6.545)	-16.562** (7.021)	-5.221*** (1.022)
Elevation (m)	0.082*** (0.016)	0.079 (0.056)	0.142 (0.218)	-0.037*** (0.010)
Standard Deviation of District Elevation (m)	0.009 (0.032)	-0.141** (0.071)	-0.285 (0.247)	0.028* (0.016)
District Population Density	0.023 (0.015)	0.027 (0.017)	-0.060* (0.035)	-0.063*** (0.009)
Distance to provincial center (km)	-0.122 (0.087)	0.239 (0.181)	0.985 (0.647)	0.033 (0.030)
District Distance to Coast (km 10s)	-0.437** (0.187)	-0.348 (0.499)	0.349 (0.795)	-0.147 (0.104)
Railway Indicator	-2.103 (4.534)	-1.184 (4.752)	5.665 (6.432)	1.498 (1.130)
Constant	30.769*** (8.240)	45.938*** (9.426)	71.682*** (15.938)	36.172*** (1.978)
Observations	512	153	61	153
Adjusted R-squared	0.257	0.474	0.399	0.481

Notes: The table reports ordinary least squares regression coefficients, and clustered standard errors at the provincial level (specification 1) and robust standard errors (specifications 2 through 4) in parentheses. *** p<0.01 ** p<0.05 * p<0.1.

Appendix B: Proximity to early land offices and prevalence of rural poverty

Table B1 provides OLS regression results showing the relationship between the proximity to an early land office and the percentage of the rural population in a district that is deemed to be below the government's poverty line in 2017 (National Statistical Office 2020).

Table B1. Proximity to early land offices and prevalence of rural poverty, 2017

	(1)	(2)	(3)
	<i>Dependent variable: Percentage of rural district population living in poverty</i>		
	<i>All Districts</i>	<i>Central Region</i>	<i>Central Region Provinces with Early Land Offices</i>
Distance to Closest Early Land Office (10s kms)	0.019 (0.015)	0.204*** (0.029)	0.230 (0.207)
Proportion of District Households in Agriculture	0.860 (1.026)	1.241 (0.996)	1.826 (1.337)
District Distance to River (km 10s)	0.037 (0.248)	0.223 (0.292)	0.447 (0.349)
District Elevation Mean (m 100s)	0.604*** (0.204)	0.013 (0.521)	-1.441 (1.125)
District Elevation Standard Deviation	0.002 (0.003)	-0.000 (0.006)	0.021 (0.014)
District Population Density	-0.000 (0.004)	0.003* (0.002)	0.003 (0.004)
Distance to Amphoe Muang District (km 100s)	0.597 (1.149)	0.634 (0.848)	-3.412 (2.567)
District Distance to Coast (km 10s)	-0.019 (0.024)	0.372*** (0.029)	0.380*** (0.039)
District Railway Indicator	-0.058 (0.342)	-0.635** (0.320)	-0.453 (0.391)
Constant	2.444** (0.961)	-1.488** (0.603)	-1.533 (1.017)
Observations	862	207	79
Adjusted R-squared	0.200	0.582	0.626

Notes: The table reports ordinary least squares regression coefficients, and clustered standard errors at the provincial level (specification 1) and robust standard errors (specifications 2 and 3) in parentheses. *** p<0.01 ** p<0.05 * p<0.1.

The results for the central region show a positive relationship between distance from an early land office and the percentage of rural inhabitants in a district living below the government mandated poverty line. The coefficient on the distance variable for the central region is 0.204. This implies that on average poverty increases by 0.204 percentage points for every 10 kilometers further a district is located from an early land office. The average rural

poverty rate at the district level in the central region is 3.9 percent, thus this persistent relationship between less access to land titling and rural poverty is not negligible.

For information, the summary statistics for table B1 are given in table B2 below:

Table B2. Summary statistics for table B1

	<i>All Districts</i>	<i>Central Region</i>	<i>Provinces in Central Region with Early Land Offices</i>	<i>Sources</i>
Percentage of District Population Below Poverty Line in 2017	4.592 (3.088)	3.589 (2.907)	3.526 (2.589)	NSO (2020)
Distance to Closest Early Land Office (10s kms)	26.434 (21.033)	6.219 (5.849)	2.752 (1.988)	Feeny (1982); ICTC (n.d.)
Percentage of Households in Agriculture in 2011	63.966 (20.499)	44.718 (21.275)	43.372 (18.456)	NRD (2011)
Distance to River (km 10s)	0.589 (0.583)	0.485 (0.532)	0.425 (0.495)	ICTC (n.d.)
Elevation (m)	2.005 (1.907)	0.757 (1.089)	0.434 (0.700)	ICTC (n.d.)
Standard Deviation of Elevation	84.29 (93.549)	58.249 (80.597)	30.837 (54.399)	ICTC (n.d.)
Population Density in 2011	83.622 (60.134)	111.083 (92.167)	120.224 (79.659)	NRD (2011)
Distance to provincial center (km)	0.149 (0.205)	0.102 (0.200)	0.083 (0.115)	ICTC (n.d.)
Distance to Coast (km 10s)	19.76 (13.600)	7.723 (5.517)	9.053 (5.136)	ICTC (n.d.)
Railway Indicator	0.206 (0.405)	0.306 (0.462)	0.287 (0.455)	Whyte (2010)
Observations	869	209	80	

Notes: Standard deviations reported in parentheses. Bangkok is excluded. NSO = National Statistical Office; NRD = National Rural Development Survey, Ministry of Interior; ICTC = Information and Communication Technology Center (Thailand).

Forests, peoples, and governments: Persistent land-use conflict in Northern Thailand

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Abstract

Land-use conflict in Northern Thailand has led to large-scale deforestation. This article suggests two reasons why this conflict has not been resolved despite the many legal and institutional approaches taken by Thai governments over the decades. First, conflicting directions embedded within the national policymaking level caused uncertainty for policy implementors at ministerial levels. Second, policy-drivers at the local level interacted with the specific socioeconomic context of upland residents in a way to make land-use conflict persistent. Contradictory messages by top policymakers, combined with the national ministries' focus on purely functional tasks, diminished the importance of a local area-based approach necessary for land-use conflict resolution. Additionally, vested interests favoring agricultural expansion into the forests have been more diverse and influential than those favoring forest conservation; the former having tools at hand to incentivize smallholders to encroach into forested areas. Further driving agricultural expansion was that, in a management vacuum, local private sector actors acted as the *de facto* policy coordinators for the fragmented government local operations; however, on the forest conservation front, there was no coordinating body. This imbalanced situation has proved fertile soil for conflict.

A considerable portion of conflict and peace economics literature considers disputes over exploitable natural resource wealth as the possible causes of, often violent, conflict. But much (and perhaps even most) of this literature often does no more than include a regression variable, for example fossil fuel-related exports, revenues derived from mining operations, or the GDP percentage of agricultural output. Detailed studies delineating more precisely what the “natural resources” in question consist of, what exactly they entail, who the contesting parties are, and just why they are in conflict make up a far more peripheral part of the literature. Yet this sort of detail would seem important to characterize any underlying, and perhaps long-standing, roots of conflict. For instance, are there certain bargaining failures at hand that perhaps could have been addressed had they been specifically identified and brought out for discussion?

This article, therefore, presents a mostly descriptive case study that discusses land-use related conflict between forest encroaching cash-crop farmers and agro-

industry interests on one side, and various government agencies and forest conservation interests on the other. While forest conservation is professed, lack of a clear and concerted national policy and local implementation has led to both significant deforestation in Thailand's north, and to ongoing livelihood struggles among local populations.

The conflict over management of forest resources has, at times, led to suppression, protests, trials, and out-migration. However, they have rarely resulted in prolonged open outbreaks of mass violence—as such, Thailand's land-related conflicts have tended to be fairly “silent”. Nonetheless, people and forests are damaged by the continued absence of clear and consistent national policy formulation and implementation.

Many Thai governments have put natural resource and environmental (NRE) management and sustainable land-use among the country's top policy agenda items—as reflected in quinquennial National Economic and Development Plans (NESDPs). Conservation was especially highlighted when, in 2002, the government

adopted the late King Bhumibol Adulyadej's "sufficiency economy" philosophy as a developmental goal. Since then, the relevant implementing ministries have translated the sustainable development concept into legal and institutional frameworks. In addition, during the decades prior to this, Thai governments have undertaken numerous measures to protect forests and discourage encroachment. And yet conflict over land-use, caused by the conflicting aims of governments and local people, persists and continues to result in largely unsuccessful NRE management. What went wrong? And why has it been so difficult to successfully address this conflict?¹

Many studies have investigated the causes of land-use conflict from historical, institutional, and administrative perspectives. Their results have shown that several factors may cause friction and block the implementation of sustainable land-use. These include:

- ▶ Contested tenure and/or overlapping land claims.²
- ▶ Coordination failure both among government policies and offices, and among upland forest stakeholders.³
- ▶ Inability to enforce laws and regulations.⁴
- ▶ Neglect of the local socioeconomic context and market forces.⁵
- ▶ Insufficient involvement of local residents and inequitable benefit-sharing between locals and the state.⁶

The issue of land-use conflict in the north has also often been co-mingled with a focus on the ethnic minorities who inhabit much of the northern highlands. Their practice of shift-cultivation was taken as the initial cause of forest encroachment.⁷

This article covers over fifty years of land-use conflict in Thailand's north, ranging from the beginning of the implementation of the NESDP in 1961 to just before the 2014 *coup d'état*. It contributes to the existing literature by examining the conflict through a three-fold lens. First, over the years, policymakers (and policy sponsors) have issued conflicting, even contradictory and mutually

Northern Thailand's large-scale deforestation has been exacerbated, if not caused, by land-use conflict. For decades, this conflict has not been resolved, indeed it has been enabled by conflicting national aims with no mechanism for resolving policy contradictions. Similarly, fragmented local conservation initiatives are overwhelmed by public and private sector drivers for greater cash-crop outputs; a situation that facilitates and promotes deforestation. With minimal policy consideration for the population livelihoods versus land-use until 2019, sustained conflict was, and still remains, inevitable.

exclusive, policy directions; second, national ministerial and local policy implementors have championed conflicting interests; and third, the socioeconomic interests of forest dwellers that made them vulnerable (and succumb) to agro-industrial interests, has not always been taken into effective account by either policymakers or implementors. As a result, at the local level, the private commercial sector has been able to act as the *de facto* policy coordinator of fragmented government operations—thereby favoring agro-industrial expansion and leaving both forest conservation and smallholders to suffer the consequences.

Furthermore, this article sheds light on the reasons behind hitherto inconclusive and inconsistent findings regarding the relationship between environmental degradation and violent conflict. Many studies overlook the political and socio-economic factors underpinning levels of social resilience. In this case, while the land-use conflict region overlaps with areas that are of high ecological value and sensitive to human-made destruction, it is also the only opportunity left for forest dwellers' survival. Therefore, the way the state chooses to deal with forest dwellers affects their land-use decisions, their level of trust, and their social cohesion. In turn, this determines their capability to handle exogenous shocks (including climate change), and so influences the risk of conflict.⁸

Structurally, this article first provides background information on Thailand's northern forests, peoples, and the multitude of public sector institutions assigned to govern them. Second, it focuses on the perspective of local smallholders and their livelihood struggles. Third,

it examines national policy formulation. Fourth, it considers policy implementation at the national ministerial and local levels. Finally, this article discusses the whole from a game-theoretic perspective before concluding.

Background

The northern forests

Thailand is a unitary state, divided into 76 provinces and the capital city, Bangkok. The country's total land area is 51.7 million hectares, with 33% taken up by the Northern Thailand region. The north's mountainous areas are split into 17 provinces and further grouped into 4 clusters (see Figure 1). Many important watersheds originate from this region, which also contains more than half of Thailand's total forest reserves. Some 59% of the Northern Thailand region's forest reserves are protected with human activity being outlawed. Only about 18% of land in this region is flatland, the rest is categorized as upland (up to 500 meters of elevation) and, above this, as highland. Despite protection, from 1973 to 1998, the region suffered forest losses of 23.9 percentage points, a decline that continued thereafter (albeit at a slower pace). Large-scale conversion from forest to crop land after 1980 was driven by an increasing demand for food, biofuel, and timber.⁹

Since 1977, the government has set, but has not managed to meet, a target of maintaining a national forest cover of at least 40% of the country's total land area. Although conservation discussions were further enhanced with the introduction of the concept of "sustainability" in 2002, the forest area declined by a further 0.32 million hectares per year from 2008 to 2013.¹⁰

Local peoples, agro-industry, and their interests

Approximately 12 million people live in Thailand's north today. The majority are Khon Mueang, however, their population size is difficult to estimate. They originally come from a lowland Thai-ethnic group, having continuously migrated northward over the past half century. The remainder are ethnic minorities (the "hill tribes" people); their ancestors migrated from neighboring countries over the course of centuries to

occupy land and practice shift-cultivation. Since the mid-19th century, the northern forest has been logged for commercial purposes with immigrants and forest dwellers settling on the cleared land. Today, about 13 ethnic groups reside in the uplands and highlands, with a total population a little larger than 1.1 million people. Starting in 1969, the Royal Project, initiated by King Bhumibol Adulyadej, encouraged upland ethnic minorities to substitute opium with legal cash-crop production and to change from shift to permanent cultivation. With timber companies still logging, lowland farmers and agribusinesses migrated north to farm the cleared land. Forest management from 1986 to the beginning of the 21st century displaced a large number of forest dwellers to the lower lands (45% of whom were ethnic minorities). Contrastingly, at the same time, landless people, lowland people, and others from throughout the country, saw the cleared land as an opportunity for illegal occupation. Cash crop expansion in the uplands continued, with growing maize becoming the farmer's main source of income from the early 2000s. Given the priorities and activities of the Thai agro and animal feed industries, maize growing presents itself as the only rational economic option and so upland smallholders' livelihoods have inevitably conflicted with the goal of forest conservation.¹¹

Politically, the Northern Thailand region, especially the rural upper north, was considered a stronghold of the former prime minister, Thaksin Shinawatra. During Thaksin's time in office, the issue of land-use conflict, in particular "forest reclamation", was not in the spotlight. But "land for the landless" and "land deeds for every land holder" were among his many populist policies. His strategy of mobile cabinet meetings around the country (especially in the rural north), gave him the opportunity to hear of local problems. It was reported that he occasionally distributed land deeds during his tours. In addition, his governments promoted rubber as a new moneymaking crop for northern farmers.¹²

National and subnational government institutions

The later analysis in this article is located within the policy setting described here. It provides an overview of the key policy actors at the national level and the policy

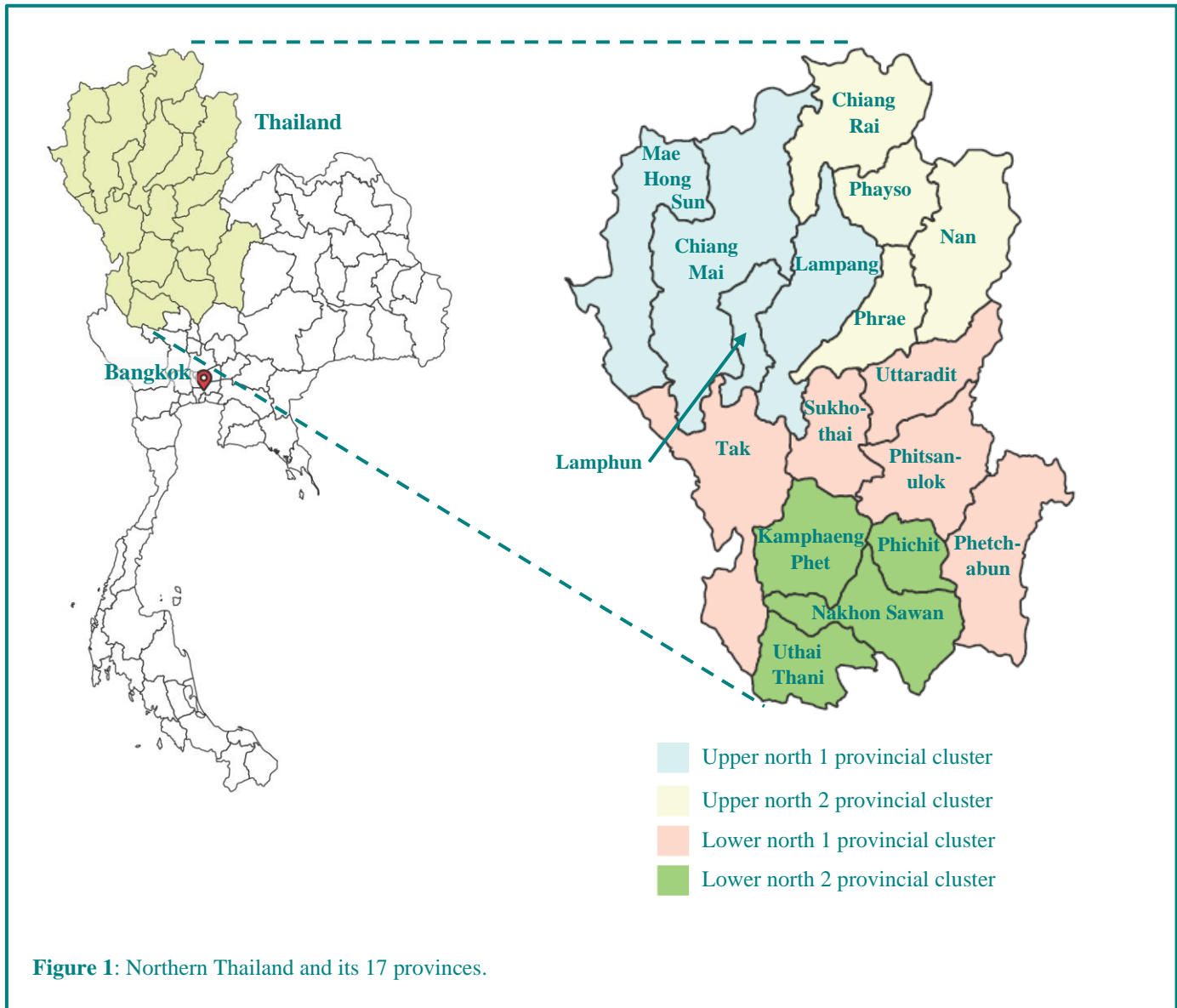


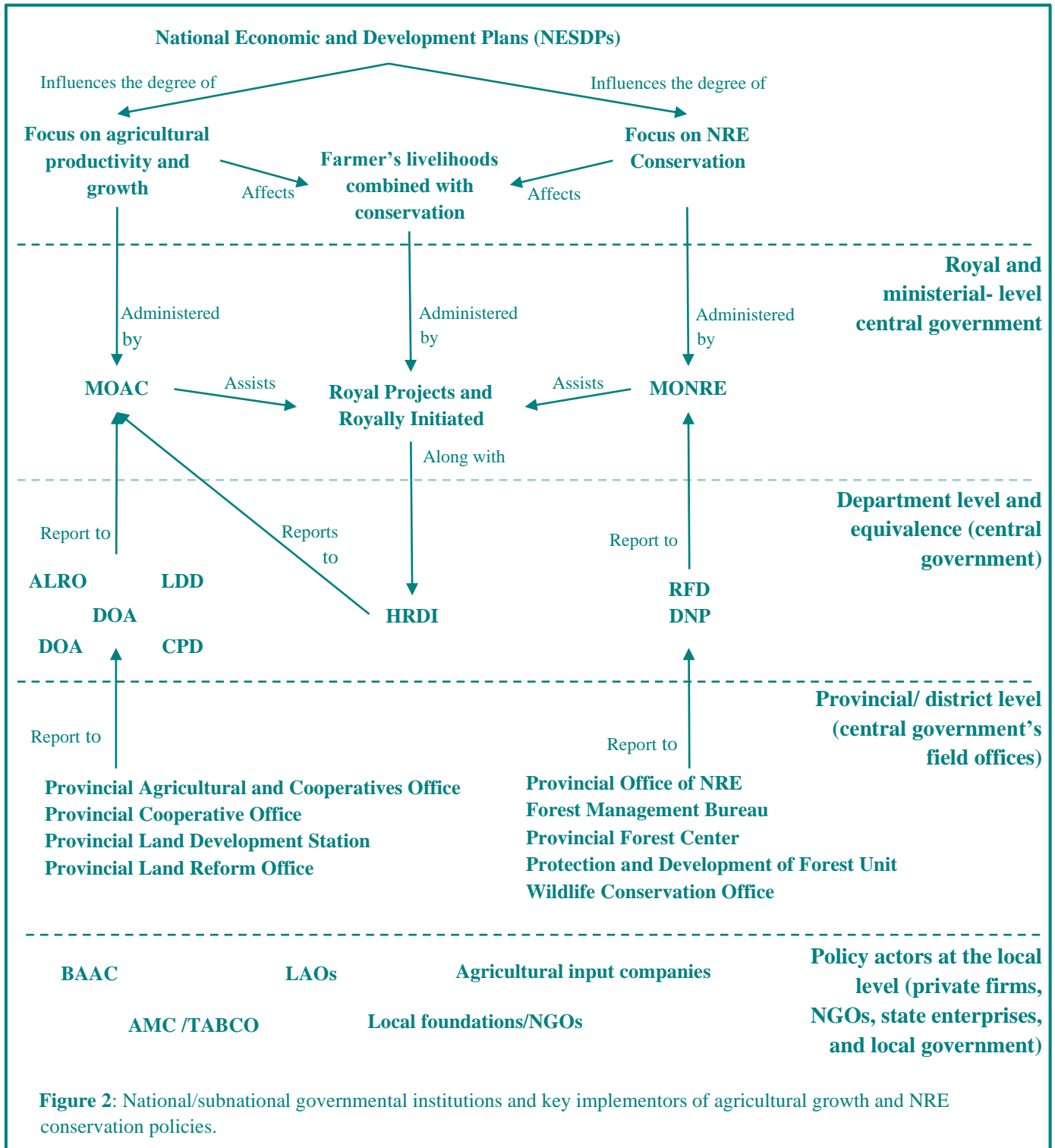
Figure 1: Northern Thailand and its 17 provinces.

implementing institutions at the subnational and local levels (see Figure 2).

Thailand's public administration is divided into three levels: First, the central government, consisting of ministries, bureaus, and departments; second, provincial governments; and third, both local-level administration organizations (LAOs), examples of which are subdistrict-level administrative organizations (SAOs), and provincial-level administrative organizations (PAOs). The central framework for the country's development is the NESDP, formulated by the National Economic and Social Development Board (NESDB).

Each ministry's projects and implementation plan need to be consistent with this national plan. From policy drafting to implementation, the Ministry of Natural Resources and Environment (MONRE) and the Ministry of Agriculture and Cooperatives (MOAC), are the key ministries involved in issues of land-use, forest conservation, and the agricultural practices of upland farmers.¹³

The MONRE, established in 2002, has designated its Royal Forest Department (RFD) and its Department of National Parks, Wildlife, and Plant Conservation (DNP) to be in charge of forest management and conservation.



Prior to 2002, the RFD was housed within the MOAC and was the sole national government agency in charge of forest utilization and conservation.

Once the MONRE was founded, responsibility for protected areas (i.e., conserved forest) was transferred from the RFD to the newly created DNP. Since then, the

RFD is left with responsibility for managing forest resources *outside* protected areas. At the local level, the MONRE has many field offices operating around the country (see the right-hand list in Figure 2). SAOs also take part in managing forest use, with 5,320 SAOs established so far.¹⁴

The MOAC performed the role of promoting cash-crops through many departments such as, the Department of Agricultural Extension (DOAE), the Agricultural Land Reform Office (ALRO), the Department of Agriculture (DOA), the Cooperative Promotion Department (CPD), and the Land Development Department (LDD). At the local level, their field officers perform supporting roles through their provincial and district units (see the left-hand list in Figure 2).

Another two key players at the field level are the Bank of Agriculture and Agricultural Cooperatives (BAAC) and Agricultural Marketing Cooperatives (AMCs). The BAAC is a state enterprise, established in 1966, providing financial assistance to farmers to reduce informal, high-interest rate lending. The BAAC and the MOAC helped farmers establish AMCs at provincial levels to collectively purchase farm inputs and sell produce at a fair price. In 1992, AMCs and the BAAC founded the Thai Agri-Business Co. Ltd. (TABCO) to represent all AMCs. TABCO collaborated with private companies to supply hybrid maize varieties to farmers to increase maize productivity.

The primary vehicles for the promotion of highland sustainability have been the Royal Project and Royally Initiated Projects. Established in 1992, the Highland Research and Development Institute (HRDI) is a public organization affiliated with the MOAC to conduct R&D to support and extend the area-based work of the Royal Project on upland/highland areas. The Royal Project has 39 operating sites across the upper Northern Thailand region. Many of these sites are in forest reserves and conserved forests.

Having outlined the policy arena, this article now turns to consider the perspectives of the various economic agents engaged in the struggle over forest conservation.

Local smallholders and their livelihoods

The unique history the upland farmers migration, socioeconomic conditions, and livelihoods made the area particularly vulnerable to land-use conflict. Three instructive characteristics of this situation are discussed in the following subsections.

Misperception regarding the composition of upland residents led to a narrow policy focus and mistrust between local people and the authorities

Upland ethnic minorities' shift-cultivation was viewed as a threat to the forest and harshly criticized by lowland people and those in the central region. Moreover, the minorities' history of illegal migration, their involvement in the opium trade, and some communist insurgent activities (1965–1983) led to popular and institutional mistrust of them. Negative stereotypes associated with hill tribe peoples led to the misperception that they were to blame for the deforestation in the northern uplands. However, as described previously, most upland residents were in fact lowland peoples who had inwardly migrated. The result was an overly narrow policy scope and the mis-targeting of upland development.¹⁵

Early political conflict and settlement prior to the designation of forest reserves made officers reluctant to enforce law

The National Forest Reserve Act (1964) provided a new definition of forests that immediately converted 40% of the total land to state ownership (that no one could acquire by law)—however, fully 10 million people were already living on this land. Areas designated as national forest reserve increased continuously to 46% of the country's total land area by the 1990s, while *actual* forest coverage fell from 53% in 1960 to 25% in 1985. These contrary trends reflect the ever-larger numbers of illegal encroachers residing in the national forest reserves. Furthermore, from 1976 to 1982, the government itself encouraged people to settle in zones in the north where communists were believed to reside (to decrease the opposition base)—a policy that encouraged much slash-and-burn activity.¹⁶

Additionally, officers were reluctant to enforce laws because most upland settlements arose before the designation of forest reserves. Some of the designation and demarcation of national forest reserves were done by drawing lines on a map—i.e., without actual investigation of residence and cultivation before the reserves were established.¹⁷

Farmers' limited market opportunities associated with their geographical location

Upland farmers had no irrigation, no capital, no land ownership, and were far from markets. This resulted in a tendency to choose crops that received government support. Farmers were highly responsive to price-support policies such as price guarantees or maize pledging schemes, principally designed to provide farmers with guaranteed “fair” prices in order to mitigate market price volatility. Additionally, the high market demand for maize, an extensive network of local gatherers and silos, easy access to agricultural inputs from private companies, and ready loans from the BAAC, all made maize the easy choice. Upland farmers also became locked-in via a debt-cycle of continual loans to pay for their reliance on chemical inputs to ensure crop productivity.¹⁸

In all, when considering deforestation of the uplands, the government not only deals with ethnic minorities; they deal with a majority population of conventional smallholder farmers who are responsive to market incentives. This historical context, along with the geographically determined upland limitations, suggest that to tackle land-use conflict in the region, any conservation policy that separates farmers' livelihoods from forest conservation is likely to fail.

National policy formulation

Examining all eleven NESDPs (implemented from 1961 to 2016), several key elements likely caused confusion and uncertainty for policy implementors which would, in turn, lead to the unsatisfactory conservation policy outcomes. Three of these elements are discussed in the following sections.

The upland conservation agenda was neglected for over 20 years

From the first to the fifth national plan (1961–1987), the country's main goal was rapid growth through expansion of the agricultural sector and associated exports. At the start of the first plan, forest areas occupied roughly 53% of the total land area. While the plan set aside 50% (25.66 million hectares) of this land, the government also prioritized the expansion of agricultural output. Maize was promoted on the uplands, achieving a 30% productivity increase by the end of the period. Agricultural credit to farmers was expanded through the BAAC in the second plan (1967–1971), with the third plan (1972–1976) incorporating social dimensions. Still, the second and third plans show no evidence of any clear direction for NRE management. The fourth plan (1977–1981) supported crop intensification and the development of agro-industry; it also revised downward the target of maintaining of forest reserves from 50% to 40% of forest areas. A conservation plan at the time was constructed for the purpose of promoting forest utilization (e.g., timber production). By the beginning of the fifth plan in 1982, forest area had fallen to 30% of the country with the upper north region still geared toward increasing agro-output. Highland policy did not aim for conservation *per se*, nor on settling the land-use conflict; instead, it was primarily to tackle hill tribe issues. The presumed negative effect of minorities' involvement with the opium trade and their shift-cultivation was being used as an argument to resettle minority groups away from conserved forests. In the face of strong resistance, the government avoided actual resettlement and instead launched a series of development programs. Included in these was the provision of residence permits, although these did not give bearers a right to own land.¹⁹

A narrow approach to conservation being applied to most plans

In contrast to explicit development targets set for agricultural and agro-industry growth, there were only limited references to conservation in the first to fifth plans. For example, the fifth plan's “target” for

conservation consisted of just stating the amount of forest area to be conserved. Its strategies, such as land demarcation and the designation of conservation areas, still lacked any engagement with people's livelihoods.

The RFD did not have many government or private sector allies identified in the national plans—in stark contrast to the production of cash-crops. Cash crop production and expansion received support from the BAAC and many government departments in charge of land, seeds, agricultural promotion, and research. Over the period 1978–1980, boosting Thailand's agricultural sector secured 46.7% of the country's total R&D budget. Conservation, however, received only 1.6% of the nation's R&D budget in this period.²⁰

Contradictory goals and no clear priority on issues that require tradeoffs

The sixth to tenth national plans (1987–2011) showed an increased focus on various aspects of conservation. In the sixth plan (1987–1991), the 40% forest target was divided into 15% for “conserved” forests and 25% for “economic” forests. However, following a nationwide ban on logging in 1989, these figures were reversed in the seventh plan (1992–1996). In contradiction, throughout this period, the government also sought faster growth in the agro-processing industry.²¹

It was only from the eighth national plan (1997–2001), that we see aims to replace monoculture with sustainable farming. The ninth plan (2002–2006) adopted the King's “sufficiency economy” philosophy, emphasized local participation in NRE management, and designated all Class 1 watersheds as conservation areas. The tenth plan (2007–2011) emphasized the correct identification of reserved forest boundaries. Despite all these plans, forest coverage stood at only 33.6% by 2011.²²

Contradictory priorities can be seen clearly in the tenth plan. While resource conservation was highlighted as important, another goal was to be a world-leading food producer through the expansion of conventional agro-production, from 12.4% of GDP in 2005 to 15% in 2011. No implementation plan suggests how these two goals were to be achieved simultaneously, especially as agricultural land in the north overlaps with forest land.

So, while there were strategies to tackle forest encroachment, where did they rank and interface with the strategies and actions supporting the conflicting national goals?²³

In the eleventh plan (2012–2016), measures such as registration of landowners in all conservation areas and providing precise definitions of acceptable land-use in conservation areas were added. However, the plan also aimed to further increase the share of agricultural commodities and agro-industry to at least 16% of GDP while still lacking any conflict resolution mechanisms.

Without clear, non-contradictory prioritization of national goals, area-specific plans, and specific directions to tackle the livelihood concerns of locals, what are policy implementors in national ministries and local areas to do? As one might expect, the responses were varied and are discussed in the following section.

Policy implementation by national ministries and their field offices

In policy implementation, there are three major channels by which Thailand's national annual budget is used to address local NRE issues. The first is through allocations to each ministry, which then funds implementation by ministerial field offices (Figure 2). The second channel is through direct budget allocations to provinces, or clusters of provinces in accordance with provincial/regional plans. However, at approximately 0.2–0.9% of the total national annual budget, the allocation is relatively small and cannot fully address the complex issues specific to each area. Given its small effect on NRE management, this channel is not further discussed in this article.²⁴

The third channel, starting in 2007, is through allocations to LAOs, which then use their revenues (from local taxes/duties and from additional supporting government grants) to address local concerns. However, their role in area-based NRE management lacks strength due to a lack of skills, manpower and its dependence on central government funding. The implication of this is separately discussed later in this article; while this section focuses on the role of national ministries.

Two issues in particular stand out when examining the details of national policy implementation such as:

The structure of national annual budgets; actual expenditure; projects and activities related to northern land-use matters; forest conservation; and reforestation commitments by the MONRE and the MOAC from 2002–2014. The first issue concerns ministerial use of budgets and planning, while the second concerns the performance measures used to assess NRE work.²⁵

Too few agencies, spending too little and all doing conventional unintegrated functional work

The MOAC's functional work has long focused on providing water for agriculture, managing commodity price levels, increasing the number of registered farmers of the primary economic crops (e.g., maize), and increasing agricultural productivity and efficiency. Work directly addressing highland agriculture and land-use issues are annually funded through the HRDI. However, the HRDI receives only 0.04% to 0.06% of the MOAC's annual budget. Departments such as the Royal Irrigation Department, the LDP and the ALRO also allocate part of their budgets to assist the work of the Royal Project and Royal Project Extension. However, the 39 Royal Project sites only cover an area of approximately 0.8% of the northern upland/highland area (with most of these being at high elevations). Although the HRDI has been expanding its work sites (including those for the Royal Project and Royal Project Extension), the combined area is exceedingly small when compared to the total upland and highland area in the region.²⁶

In the same vein, the handling of persistent land-use conflict was not part of the RFD's and the DNP's main duties. When examining RFD budget allocations and corresponding projects/activities, the RFD is mostly focused on the utilization of forests, preventing forest fires, demarcation, and assisting in Royal Projects and Royally Initiated Projects. There was support for the registrations of community forests, but this did *not* cover those who found themselves living on land now designated as conserved areas. After 2009, reforestation and rehabilitation were added. The DNP's conservation work in protected areas also emphasizes demarcation, policing, arrest/suppress operations, and prosecution. Notably, resolving land-use conflict and finding a way out for the affected farmers was not part of their work.

Performance indicators of governmental units participating in upland development were mostly function-based—leaving little room for area-based and/or long-term activities

Since 2004, all government agencies were required to use performance agreements and measurements in which a series of key performance indicators (KPIs) were deployed. These KPIs were created by departments, or their structurally equivalent bodies. Rewards such as bonuses and promotion of public officers are based on successful performance versus these KPIs. The majority of the KPIs at the ministerial and departmental levels reflect purely functional tasks and vary little from year-to-year. As a result, there was little incentive to engage in the complexities of cross-departmental working to effectively achieve long-term national goals.

In the past few decades, the MOAC employed indicators such as agricultural gross domestic product and the number of registered economic crop growers. These indicators reflected the department's most basic functional work (i.e., supporting economic crop expansion) and did not consider the size of the cultivation area. Additionally, there are no KPIs that adequately capture progress concerning the long-term effects of area-based work—such as a reduction in the number of communities involved in land-use conflict. More importantly, for areas located in a national park, the MOAC indicators actually signal anti-conservation priorities.

A similar picture emerges from the MONRE's KPIs. For example, the leading indicators have been the amount of reserved forest and reclaimed forest, thus showing that emphasis has always been placed on a continuation of existing functional practices. Area-based work, involving long-term and tightly integrated collaboration across governmental units to positively influence local forest conservation behaviors, is not (yet) promoted by any performance indicators.

Policy implementation at the local level and the role of the private sector

This section considers policy at the local level and discusses three aspects in particular: First, the inability to locally enforce national conservation policies; second,

local drivers for forest conservation and land-use conflict resolution remaining weak and inadequate; third, diverse drivers and institutions continuing to push for agricultural expansion at the expense of forests.

Inability to enforce a balanced conservation policy

Between 1941 to 2014, five substantial forest-related acts were promulgated taking a top-down command approach—none of them directly addressing NRE management by communities. The National Reserved Forest Act (1964) and National Park Act (1961) directly affected the right of traditional communities to access forest resources and declared them as illegal encroachers of state land (even though they occupied the land *before* the acts came into force). Subsequent protest by upland farmers led the government to pass the Agricultural Land Rent Control Act (1974) allowing six-year renewable land-rental contracts.²⁷

Since Thai law does not permit legal title deeds to be held for any upland area, as a compromise, the government (the ALRO) introduced Sor Por Kor (SPK) certificates to farmers in 1982. These certificates provide usufruct rights for farming purposes only, do not entail full ownership, and can only be transferred to descendants.

In 1985, the National Forest Policy defined land with a slope of greater than 35 degrees as forest land that cannot be claimed by any land-use certificates, but it did not give attention to mitigating any consequent effect upon farmers' livelihoods. Policy enforcement further relocated at least 45% of upland ethnic minorities to new settlements with inadequate resettlement payments. In 1992, the RFD further classified national forest reserves into three zone types: Conserved forest (C), economic forest (E), and agricultural land (A). People were not permitted to inhabit or utilize the C-zones. However, relocation of people who occupied these lands before it was declared as a C-zone inevitably caused huge controversy. The government, therefore, compromised by introducing the concept of community forestry to motivate forest dwellers to get involved in resource management. In addition, 7 million hectares of degraded forest in the E-zone was transferred to forest dwellers in the form of SPK certificates. Compromise continued,

with the government continually giving up degraded forest land (from A and E-zones) to the ALRO. For example, in 2002, the government allocated 93,200 hectares for cultivation by forest dwellers (via ALRO's SPK certificates).²⁸

A clear indication of the lack of balance in the formulated conservation policy is the national government Cabinet Resolution of 30 June 1998 becoming an important tool to prove farmers' rights over settled land. Landholders who could prove that they had settled on and utilized certain parcels of land before June 1998 were entitled to take ownership of that land. This resolution led to many disputes and court cases, as in a number of instances it was technically difficult to prove settlers' ownership eligibility. Nonetheless, this resolution allowed forest-dwelling communities to remain temporarily in place until a more permanent solution could be developed. Recently, the 2019 National Park Act permitted smallholders, the landless, and poor farmers, who had occupied land before the enforcement of the National Council for Peace and Order No. 66/2014 (17 June 2014), to live and cultivate that land, but it still does not grant ownership in the form of title deeds.²⁹

Overall, the command-and-control approach, in conjunction with a series of compromise measures, has caused tension and confrontation between authorities and forest dwellers. Such an approach did not delve into the ultimate causes of land-use conflict—primarily because the concept of local participation and the consideration of farmers' sustainable livelihoods were missing.

Weak and inadequate local drivers for forest conservation and land-use conflict resolution

Despite their duties to assist the Royal Project, the Royally Initiated Projects, and the HRDI's on-going work, the leading KPIs of MOAC's and MONRE's departments do not support long-term conservation goals in land-use conflict areas. With no single agency identified to coordinate the fragmented forest conservation and land-use related conflict-resolution efforts, functional tasks are therefore addressed independently without strategic direction.

Civil society such as local foundations and NGOs

have been part of the conservation movement from the start of the 21st century. Most of their work, however, is communication—to help voice locals' concerns and to increase conservation awareness generally. While SAOs have power to manage NRE within their boundaries, few SAOs have taken leading roles in local community forest management to date. The majority of SAOs are not yet ready in terms of capacity, governance, human resources, fiscal management, and accountability. As such, they are unable to perform roles requiring a high level of coordination and planning among relevant governmental units, NGOs, and local people.³⁰

As for participation of local smallholders in NRE management, for over half a century the government did not engage locals as alliance partners in forest conservation. The Community Forest Act (2019), granting certain usage rights, was first drafted in 1991 but took 28 years (and several rewrites) to pass into law. So, it is only very recently that communities outside conserved forests can legally use forests (including using water reservoirs within their community forests).

As a consequence of all this, for the past sixty years, forest conservation efforts have primarily come from governmental units who serve their ministries' by executing purely functional tasks. This contrasts starkly with efforts devoted to agro-expansion.

Continual push for agricultural expansion

Growing cash-crops such as maize was believed to help in the alleviation of poverty in rural areas, while strengthening downstream agro-industries. Increasing productivity and the number of registered cash-crop growers were therefore part of the MOAC field officers' main tasks.

On the financial side, the BAAC allowed cash-crop farmers without land to use SPKs or Joint Liability Group arrangements as loan collateral. As most farmers take out annual agricultural credits from the BAAC, and hence automatically attain AMC membership, they find it convenient to purchase various farm inputs through AMCs. This relationship among farmers, the BAAC, and the private sector developed through the 64 AMCs spread around the country. The private sector exploited this relationship to actively engage in cash-crop

promotion. TABCO, as the representative of all AMCs, collaborated with private companies to replace Suwan1, an open-pollinated maize variety, with a hybrid variety that increased productivity (requiring repeated seed purchase). As for the crop itself, an extensive network of middleman and millers' representatives grew to purchase maize from farmers and sell it to silo or feed mills.

Additionally, various governments implemented commodity price-support schemes through the BAAC. These policies were effective (in terms of farmers' participation) and, coupled with a strong demand for maize, made farmers ever more dependent on the BAAC.

For almost two decades, Thai governments have shifted the emphasis of successive national plans toward the encouragement of sustainable agricultural practices and forest conservation. However, the dynamics and key players at the local level relentlessly support a conventional cash-crop based approach. The private sector does not find much to be gained from farmers being diverted toward sustainable farming. What is missing is finding a role for the private sector in conservation.

Conversely, countering agricultural expansion, and consequent risk of land-use conflict, remains hindered by: The insufficient number of officials handling actual conservation work; the lack of an influential pro-conservation alliance; and slow progress in local participation in NRE management.

Discussion: A game-theoretic examination

Noncooperative game theory is an established tool for modelling conflicts of interests such as that between the state and villagers regarding forestland development. Its application allows us to understand why conflict is persistent and why Pareto-optimal outcomes cannot be easily achieved, especially in short-run contexts. In a simple noncooperative game, two players face each other, the government and the original inhabitants of land later proclaimed a national forest. The government has two options: (S) to strictly employ a command-and-control approach (any local use of forests is prohibited) or (C) to compromise in various ways (e.g., assigning usufruct rights and allowing full utilization). Likewise, land occupants have two options: Forest encroachment

(EN) for a cash-crop based living or to comply (RC) with the government’s conditions, that is, not encroaching. With a lack of communication and/or trust, a *myopic* vision would lead to a payoff matrix as in Table 1.

For outcome (S, EN), the government loses due to high monitoring costs and escalating conflict over forest reduction.

Farmers realize short-term gains from cash-crops, but at the cost of constant confrontation with state officers. The outcome (C, EN) incurs a higher loss to the government through the reduction of forest areas. Farmers again experience short-term gains from cash-crops but with fewer confrontations than outcome (S, EN). The outcome (S, RC) benefits the government as conservation goals are met, but at the cost of large monitoring expenses. Farmers, however, suffer loss of income, land access, and are unable to maintain their livelihoods. Finally, under outcome (C, RC) farmers generally comply with government strictures, but the government gives farmers land-use access subject to certain conditions. This would seem to be Pareto optimal, as the government benefits from no further encroachment and low monitoring costs, and farmers benefit from fewer confrontations (though their earnings are lower compared with non-compliance). As such, with the described options and pay-off in the table, cell (S, EN) is a Nash equilibrium in this one-shot game.

In Table 1, the highlighted low payoff 2 is important; any policy to increase it over the long-term would help secure the Pareto optimal outcome. One option may lie in the government defining land-use conditions in a way which reflects the level of trust (or lack of it) between the two parties. Farmers need long-term confidence in land-use rights to invest, re-invest, and generally take care of the forested lands they occupy. Also, given the strong market incentives to grow cash-crops, farmers need to be

Table 1: Payoff matrix for land-use conflict in the northern upland

		Upland Inhabitants	
		Keep encroaching on forests (EN)	Refrain from encroaching and comply with government conditions (RC)
Government	Strict command-and-control approach (S)	-5, -5	-2, -10
	Compromise with exceptions/conditions (C)	-10, 5	5, <u>2</u>

Note: The payoffs are illustrative and chosen to afford a rough value comparison (i.e., not to convey an exact cardinal meaning).

convinced that they benefit more from non-cash crop alternatives in the long run. Such trust and confidence might be fostered by genuinely incorporating an area-based approach, local participation in NRE management, and incorporating incentive-based conservation policies within the conservation strategy.

However, neither trust nor confidence has been established over the past 60 years. Lacking unity in policy direction, relevant ministries are not incentivized to favor an area-based strategy; their field offices perform isolated roles in accordance with their own functions and performance indicators. Separately and independently determined budgets allocated to each department led to fragmented funding toward local areas. This makes it difficult for any short-lived government to tackle local problems that require a holistic approach. The dynamic was quite different in relation to the expansion of cash-crops. Private sector and institutional drivers have taken on a role as de facto coordinators of fragmented governmental efforts to further their own interests. Furthermore, proper and effective incentive-based conservation policy has been long neglected. Based on an ill-suited command-and-control approach, the implementation strategies of NRE management mostly consisted of demarcation and designation of conservation areas. In contrast, conventional agricultural expansion policy included incentive-oriented schemes such as maize pledging schemes.

Conclusion

From the upland farmers' perspective, agriculture "wins" as long as agricultural and forest conservation policies remain uncoordinated, and agricultural policy influence continues to prevail over that of conservation policy. In this climate, the ministerial implementor of national agricultural goals, the MOAC, developed effective local institutions and private sector networks to ensure the expansion of commercial crops. At the local level, incentive-based policies and stakeholders have been working in unison to promote cash-crop expansion. In contrast, conservation has been poorly served. A combination of contradictory messaging at the national policy level, a non-incentive-based policy approach toward conservation, and a lack of influential alliance partners, has enabled persistent deforestation.

While the new 2019 National Park Act and the 2019 Community Forest Act nod toward a "people live with forests" model, the government and farmers still need to agree on *balanced* conditions of land-use that take farmers' livelihoods into account. To begin with, national goals need to be clearly prioritized in respect to each other, as a necessary condition for successfully managing an area in land-use conflict. Additionally, finding a win-win model to incentivize ministerial/field offices to engage in area-based conservation approaches is vital—with a successful solution likely involving changes in departmental KPIs. Lastly, any incentive-based conservation schemes aimed at upland farmers need to be introduced through established agricultural institutions, and perhaps, through community forestry. In all, such activities may serve as a way forward to resolve Thailand's persistent land-use conflict and, consequently, mitigate the ever-present danger of the conflict becoming overtly violent.

Notes

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opportunity and for their support throughout. I am grateful to Jurgen Brauer, the EPSJ's editors and reviewers for their valuable comments and advice that help improve quality of the article immensely I also thank Thida Weangsamut for her excellent research assistance.

1. NESDPs: NESDB (1997). Sufficiency economy: this philosophy adheres to concepts of moderation and balanced development strategy to reduce vulnerability to shocks: NESDB (2002).
2. Yasmi *et al.* (2010), NHRC (2011); Phromlah (2014).
3. Offices: Yasmi *et al.* (2010). Stakeholders: Virapongse (2017).
4. Fujita (2003).
5. Teerasuwannajak and Pongkijvorasin (2015).
6. Phromlah (2014).
7. Hares (2009), Duangjai *et al.* (2015).
8. Theisen *et al.* (2013), Caruso *et al.* (2016).
9. Human activity outlawed: RFD (2020a). Forest losses: RFD (2020a). Further declines: Kyeyune and Turner (2016); Vongvisouk *et al.* (2016).
10. NESDB (2017).
11. Population: National Statistical Office of Thailand (2020). Khon Mueang: Baird *et al.* (2017). Ethnic groups: Ministry of Social Development and Human Security (2014). Cleared uplands: Virapongse (2017). Cash crops: Ekasingh *et al.* (2004), Brunn *et al.* (2017).
12. Founding the Thai Rak Thai party, Thaksin Shinawatra served two terms as prime minister (2001–2005 and 2005–2006). Following this, in 2008 and again in 2011–2014, he exerted much proxy influence via the People's Power and Pheu Thai parties in opposition. Land deeds: Phongpaichit and Baker (2008).
13. Pungprawat (2009).
14. Protected areas include national parks, forested parks, wildlife sanctuaries, nonhunting areas, and botanical gardens and arboretums.
15. Hares (2009).
16. Forest definition: Forests were defined as lands including mountains, rivulets, marshes, swamps, canals, waterways, lagoons, islands, and seashores. 10 million people: ICEM (2003). Slash and burn: Unlike shift-cultivation, slash-and-burn refers to permanent conversion of tropical forest to agriculture, without an extended fallow period. Hence, its associated environmental problems tend to be more severe; Ongprasert (2011).
17. Fujita (2003).

18. Irrigation: If farmers register as growers of crops that receive support from government (i.e., economic crops), they would be entitled to compensation if their crops were destroyed by drought or flood. Given no irrigation, smallholders face a severe risk of drought. Debt cycle: Teerasuwannajak and Pongkijvorasin (2015).

19. Maize promotion: NEDB (1967). Crop intensification: NESDB (1977). Reserve size: 40% was believed to be the lowest level at which ecosystem balance can be preserved. Resident permits: Hares (2009).

20. Target: NESDB (1982, p. 14). Budget: NESDB (1982, p. 101).

21. Initial target: NESDB (1987), the division was specified in the first National Forest Policy (1985). Reversal: NESDB (1992).

22. Class I refers to top-grade watersheds at high elevation on the upper part of mountains with steep slopes, valleys, and cliffs. Any land-use alteration could easily cause severe environmental damage to these areas. See Forestry in Thailand, <http://forprod.forest.go.th/forprod/ebook>.

33.6% coverage: The reader may note that there was an apparent increase in forestation with official figures showing coverage at 25% in 1985 but 33.6% in 2011. The continuous decline in national forest area can be divided into 2 phases: from 1973-1998 and from 2000 to 2016. The sudden jump in 2000 was a result of better data due to a change in scale used in analysis of satellite images. Before 2000, forest area data was drawn from satellite image maps with scale of 1:250,000 scale, while the data after 2000 was based on maps with a scale of 1:50,000.

23. Expansion: NESDB (2007). Encroachment strategies: These included the involvement of LAOs in NRE management and amendment of laws to support coordination among conservation stakeholders at local levels.

24. Parliament (2020).

25. MOAC annual report from OAE (2020); DOAE (2020); DNP (2020); RFD (2020b); SOC (2020).

26. Budget allocation to HDRI: OAE (2020).

27. Forest-related acts: Rights and Resources Initiative (2020). Effects on communities: Kurashima and Jamroenprucksas (2005).

28. Relocation: Virapongse (2017). Zoning: C-zone land is comprised of Class I watershed-related protected areas. The E-zone designated poor-condition forests for commercial plantations, and reserved areas for landless farmers or community forestry. The A-zone is suitable

for agriculture and for allocation to landless farmers by the ALRO.

29. Cabinet Resolution of June 1998: SOC (1998), the resolution allowed those who lived on forest land before it was designated as reserved/conserved forest to continue inhabiting the land. For newcomers who occupied the land after the issuance of the resolution, they would be prosecuted/ arrested. For those who occupied the land after the land was designated conserved/reserved forest but before the issuance of the resolution, they were to be relocated, but if relocation was not possible, were allowed to live on that land but prohibited from further encroachment. NCPO orders: Secretariat of the House of Representatives (2020), the NCPO issued number of orders aiming to cease deforestation and forest encroachment through measures such as reclaiming illegally used forest land and re-establishing healthy forest (NCPO Order No. 64/2557 & NCPO Order 66/2557). NCPO Order No. 66/2014 indicated that the primary targets of NCPO order 64/2557 would be the capitalists or large-scale encroachers, while impoverished people, landless people and people who dwelled in the forest area before the area was declared to be forest reserve area, must not be affected by the Order.

30. NESDB (2017).

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Protracted statelessness and nationalitylessness among the Lahu, Akha and Tai-Yai in Northern Thailand: Problem areas and the vital role of health insurance status

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Abstract

Thailand has one of the largest stateless populations in the world. Stateless people are denied access to basic rights and services, driving inequality and discrimination and threatening peace and security. This article aims to explore the problems that stateless people are facing in their daily lives, with a focus on healthcare services, health insurance coverage, and mobility. Primary data were collected in 2020 from 108 stateless and nationalityless adults in Chiang Mai province, belonging to three ethnic minorities, and analyzed using a mixed methods approach. The respondents are exposed to daily environmental stressors, the most serious being exclusion from the Universal Coverage Scheme, mobility restrictions and the absence of land rights. While out-of-pocket health expenditures increase financial vulnerability, a lack of health insurance is also associated with perceived poor quality of care and unmet healthcare needs. However, observed differences among the three ethnic groups highlight that some problems are specific to individual ethnic groups and not necessarily a consequence of citizenship problems. Given the experience Thailand has gained in achieving universal health coverage for Thai citizens, there is an opportunity to address the healthcare plight of Thailand's stateless and nationalityless population through prioritizing the expansion and improvement of the existing Health Insurance for People with Citizenship Problems policy.

At the end of 2018, nearly 4 million people worldwide fell under the UNHCR's statelessness mandate, however, statelessness is estimated to exceed 10 million people globally. The 1954 UNHCR Convention relating to the Status of Stateless Persons defines "Stateless Persons" as "*individuals who are not considered citizens or nationals under the operation of the laws of any country*". In the Thai literature the term "stateless" is further broken down into the *stateless* and the *nationalityless*, the latter being "*persons who are habitually resident in Thailand and whose rights are protected by the Thai State but who have neither Thai nor any other nationality*". Nationalityless persons, in contrast to stateless persons, are registered in Thailand's civil registration system. Basic human rights, including the right to health and access to basic healthcare are, however, typically tied to having a legal nationality. Excluding populations from enjoying basic human rights is not only extremely damaging in terms of human development, but may also threaten peace and security

by engendering conflict and violence. Several studies have found that horizontal inequalities, i.e., multidimensional inequalities across geographic areas or ethnic or other social groups, are associated with group mobilization and conflicts. Conflicts arising from group-based grievances may escalate into violence, especially if deprivations are perceived to result from state actions of exclusion and discrimination against a specific group. For example, both Brown and Croissant argued that perceived discriminatory state actions contributed to conflict escalation in southern Thailand. Statelessness generates and reinforces economic, social, and political inequalities by excluding vulnerable groups from citizenship. While numerous studies examine access to healthcare and health outcomes of vulnerable groups, most notably refugees, there are very few studies that specifically focus on stateless populations. However, while refugees and the stateless may be exposed to similar problems, there is nevertheless substantial heterogeneity between and within refugee and stateless

populations in terms of the types of problems faced and their perceived severity.¹

Thailand has one of the largest stateless populations in the world, with many of its stateless people belonging to ethnic minority groups (for example, the so-called “hill tribes”). The causes of statelessness in Thailand can be broadly classified into three types that are not mutually exclusive, i.e., problems with civil registrations, changes in nationality laws, and voluntary or forced migration from neighboring countries. Most problems are with civil registration, mainly resulting from a failure to be recorded in civil registration surveys (conducted since 1956) and/or failure to register a birth. In the past, hill tribes were living in very remote areas, associated with opium cultivation, which were not enumerated by the authorities (specific hill tribe surveys only started in the 1960s). The 1956 civil registration survey made a formal distinction between Thai and non-Thai people possible, thereby enabling selective inclusion and exclusion. Against the backdrop of communist insurgency and emerging nationalism, distrust toward ethnic minorities intensified and nationality laws became more restrictive in the 1950s and ’60s. Disadvantaged groups, including the hill tribes, were perceived to be particularly receptive to communist ideology and to pose a threat to national security. Given the influx of refugees from neighboring countries being perceived as a problem, and to prevent the spread of communism, some groups of people had their Thai nationality revoked following the retroactively implemented Revolutionary Party Announcement No. 337 B.E. 2515 (1972). This announcement, that was to remain in force for two decades, stated that citizenship was tied to the citizenship of parents instead of the place of birth. The matter was further complicated by an influx of illegal migrant workers attracted by Thailand’s economic development during the 1980s and ’90s. Close ethnic and kinship ties among refugees, illegal migrant workers and native highland groups, especially in border areas, made identification of the latter increasingly difficult. To secure borders and control movement, several colored identification cards were issued between 1967 and 2007 as a means to distinguish between Thai

Thailand has one of the largest stateless populations in the world. Despite the introduction of health insurance cover for people with citizenship problems, there are still many gaps in registration and service delivery. The resulting hardships create an inequality that may threaten peace.

and non-Thai people and to convey different types of status. This system of cards has been described as “*chaotic, inconsistent and arbitrary*” and gave rise to mis-categorization, fraud, and widespread mistrust. Hill tribes were stigmatized as aliens and associated with national security risks, environmental degradation, and narcotics. Conflicts over natural resources between hill tribes and Thai people emerged, turning violent in some instances.²

Migration flows have been linked with conflicts and violence, although pathways are complex and depend on a range of contextual factors. Empirical analysis has shown that cross-border flows of refugees are a mechanism through which conflicts spread across neighboring countries. Such conflict spill-overs can be driven by refugees who expand their rebel networks into the host country to continue their operations. In addition, refugees impose negative externalities on receiving areas, which can cause discontent among the local population, create tensions and lead to violent conflict.³ From the 1980s onwards, when communist insurgency troubles dissipated, several cabinet resolutions and amendments of relevant laws were passed to tackle issues surrounding Thailand’s stateless population. Hill tribes and other ethnic groups started to receive residential immigration status from 1995 onwards. However, in 1999, hill tribe people still without citizenship papers were classified as aliens, triggering a demonstration by an emerging citizenship movement. In addition, this movement also sought to establish a clear distinction between refugee, illegal migrant and native ethnic groups. Since the early 2000s, ethnic minorities have joined forces to form an indigenous peoples’ movement calling for rights and recognition, including citizenship. Significant progress was achieved with the 2005 National Strategy on Administration of Legal Status and Rights of Persons and legislative changes in 2008 (such as amendments to facilitate birth

registrations). From 1992 until 2017, some 253,742 formerly stateless people were granted Thai nationality. Yet, the pace of granting citizenship has remained rather slow. In 2015 it was observed that, given the average approval rate of the preceding 5 years, it would take another 5,055 years to complete the process. However, around 16,000 people were granted citizenship in 2018 alone, indicating improvement. As of 2019, 474,888 people without nationality were registered in Thailand—although the total is estimated to be much larger (as there is reason to believe that many are not registered). Complexity, sluggishness, and arbitrariness of the registration process, which is tied to evidence of birth, descent and/or residence, is found to prevent many stateless people from registering with the authorities. In addition, statelessness is inherited since a child's registration crucially depends on the registration status of the parents. This in turn has resulted in protracted statelessness and nationalitylessness over generations, as well as chronic deprivation across several dimensions. The results of a study with stateless and nationalityless Karen people showed that perceived serious problems associated with statelessness and nationalitylessness included: Mobility restrictions; lack of political participation; access to healthcare, education, and loans; and insecure or non-existent land rights. Separately, additional difficulties for this group were found to include, labor market restrictions, harassment by security officers, and vulnerability to human trafficking.⁴

Thailand has been recognized globally for achieving universal health coverage with the introduction of the Universal Coverage Scheme (UCS) in 2002; however, non-Thais were excluded. The UCS replaced two government welfare schemes, the low income and the contributory voluntary health card schemes for the poor and the near-poor—this included the stateless and nationalityless, who subsequently became dependent on charity care provided at the discretion of public hospitals. With the objective of alleviating the burden on public hospitals in areas with a large stateless population, and to make healthcare services more accessible, a Health Insurance for People with Citizenship Problems (HI-PCP) was launched in 2010—however implementation

challenges still remain.⁵

This article seeks to explore the exposure to daily environmental stressors associated with statelessness and nationalityless in Thailand, the focus being on healthcare services, health insurance and mobility. In addition, given the heterogeneity of Thailand's stateless population, this article explores differences among ethnic minorities, focusing on the Lahu, the Akha and the Tai-Yai. The Lahu and Akha hill tribes account for about 15% of the hill tribe population. While the Karen and the Hmong are the largest hill tribe groups, they also have the highest rates of citizenship and so are not examined here. The Lahu and Akha, on the other hand, who are of Sino-Tibetan origin, historically had weaker ties with lowland groups and, hence, have lower citizenship rates. With a population of about 95,000, the Tai-Yai, among whom citizenship problems also exist, are one of the largest lowland minority groups in Northern Thailand.⁶

The Health Insurance for People with Citizenship Problems (HI-PCP)

The HI-PCP mainly targets “persons exempted to temporarily stay in Thailand pending determination of their legal status”. Determining eligibility for health insurance cover involves a registration process followed by submission of the required documentary evidence to a healthcare facility (most notably civil registration and identification documents). When launched in 2010, the HI-PCP initially targeted 457,409 people (see Table 1). Following further cabinet resolutions in 2015 and 2020, another 232,702 people were included. The scheme is paid out of general taxes and delivered by public healthcare facilities under the Ministry of Public Health (MoPH); it offers a comprehensive benefit package comparable to that of the UCS (managed by the National Health Security Office). Nationalityless people who do not meet the stated requirements (or fail to navigate the registration process) and stateless people remain uncovered, implying that they either have to pay out of pocket or depend on charity care provided by healthcare facilities. Differences between the total and the initially targeted numbers (Table 1) are mainly due to status changes, i.e., people who received Thai nationality and

Table 1 HI-PCP Coverage

	<i>Cabinet resolution 23 March 2010</i>	<i>Cabinet resolution 20 April 2015</i>	<i>Cabinet resolution 10 March 2020</i>
Initially targeted number of persons according to cabinet resolutions	457,409	208,631	24,071
Included groups			
1 Aliens who were given permission to stay permanently (Thor Ror 14, ID starting with numbers 3, 4, 5, or 8)	53,027		24,071
2 Aliens exempted to stay in Thailand temporarily pending determination of legal status			
2.1 People holding an ID starting with 6 or 7 (Thor Ror 13)	195,010		
2.2 People surveyed and registered, without civil registration status (Thor Ror 38 Kor, ID numbers 0-XXXX-89XXX-XX-X)			
2.2.1 Students in the Thai (publicly funded) education system	79,420		
2.2.2 Rootless people (whose parents are unknown)	8,773		
2.2.3 People who have rendered distinguished services to Thailand	28		
2.3 People surveyed and registered, without civil registration status			
2.3.1 People who immigrated to and have resided in Thailand for a long period of time (Thor Ror 38 Kor, ID numbers 0-XXXX-89XXX-XX-X)		147,435	
2.3.2 Children of people in category 2.3.1 (Thor Ror 38 Kor, ID numbers 0-XXXX-89XXX-XX-X or 0-XXXX-00XXX-XX-X)		53,499	
3 Other people (surveyed and registered, insufficient evidence) e.g., people registered under the Chalerm Phra Kiat Project Commemorating His Majesty's 84th Birthday Anniversary		6,344	
Total number of persons (as of 5 October 2016)	336,258	207,278	

Notes: Thor Ror 14 refers to the house registration book for Thai nationals and permanent residents. Thor Ror 13 is the civil registration document for foreigners staying temporarily in Thailand, while Thor Ror 38 Kor refers to the civil registration of nationalityless people with the Bureau of Registration Administration, Department of Provincial Administration, Ministry of Interior.

Sources: Tamee (2018), RTG (2020), MoPH (2018)

are subsequently covered by the UCS, as well as attrition due to death. Several operational challenges surrounding the HI-PCP include: Capacity constraints within the MoPH; lack of government prioritization; unclear operational guidelines; poor communication between the

MoPH and local healthcare providers; inadequate cooperation between the Ministry of Interior and the MoPH; gatekeeping and mobility restrictions that are incompatible with the actual movements of stateless persons; and delays in the nationality verification

process. A study in Ranong province found that the increase in inpatient utilization of nationalityless people (holding a 13 digit national ID that starts with 0) was not due to the HI-PCP, but rather driven by age, proximity to the hospital, and catastrophic illness incidence. The evidence from four public hospitals in Tak province, however, suggests that having the HI-PCP is positively associated with inpatient service utilization of children and adolescents.⁷

Studying the issue

Exploration of the above issues involved semi-structured interviews, conducted in June 2020, with 108 stateless and nationalityless adult household heads, belonging to the Lahu, Akha or Tai-Yai ethnic groups. Appendix A provides a full description of the methodology, its shortcomings, and respondent characteristics.

Environmental stressors

The precarious nature of their situation is captured through respondents' answers to questions about daily environmental stressors (Table 2). About 87% of respondents stated that they have serious problems with mobility restrictions and health insurance. Deprivations are also strongly felt in terms of land rights, access to legal services and housing (confirming earlier studies).⁸

Broad problem areas, and hence perceived needs, however, differ across the three ethnic groups. For example, over 91% of Lahu respondents pointed out that that they have serious problems with alcohol or drug use in their communities compared to just 11% of Tai-Yai. Conversely only 22% of Lahu report problems with health care services compared to 88.9% of Akha. Environmental stressors are mostly felt by the Akha,

Table 2 Environmental stressors

	% of Full sample	% of Lahu	% of Akha	% of Tai-Yai
<i>Having a serious problem with</i>				
Ability to move about freely	87.0	66.7	97.2	97.2
Health insurance	87.0	66.7	100.0	94.4
Land rights	77.8	58.3	100.0	75.0
Access to legal services	74.1	55.6	100.0	66.7
Place to live in/housing	70.4	61.1	100.0	50.0
Alcohol or drug use in your community	63.9	91.7	88.9	11.1
Waste management	61.1	75.0	97.2	11.1
Health care services	56.5	22.2	88.9	58.3
Physical health	55.6	36.1	97.2	33.3
Feeling humiliated or disrespected	50.0	47.2	72.2	30.6
Water	49.1	33.3	94.4	19.4
Safety or protection	49.1	66.7	72.2	8.3
Harassment by police or security forces	49.1	38.9	97.2	11.1
Support from others	43.5	30.6	83.3	16.7
Employment (income/livelihood)	42.6	25.0	27.8	75.0
Education	36.1	19.4	66.7	22.2
Food	35.2	33.3	55.6	16.7
n	108	36	36	36

however, the Akha may exhibit higher levels of awareness as their advocacy efforts have been strong when compared to other ethnic minorities. Particular issues for the Akha sample are health insurance, housing, land rights, access to legal services, waste management, mobility restrictions, harassment by police or security forces, and physical health. Similarly, more than 90% of Tai-Yai respondents have serious problems with mobility restrictions and health insurance and 75% with land rights and employment. Yet, only 27.8% of the Akha and 25% of the Lahu report having serious

problems with employment.⁹

Not only the *types* of stressors, but also their *quantity* vary across the ethnic groups. The average number of environmental stressors respondents are exposed to is 14.4 for Akha, 8.3 for Lahu and 7 for the Tai-Yai.

It is important to note that not all identified stressors were regarded as problems with statelessness, with some viewed as problems within their communities. Waste management along with alcohol and drug use were viewed as community issues.

Given this article's a focus on healthcare services, health insurance coverage and mobility, further discussion of the other stressors identified in Table 2 can be found in Appendix B.

Health care and health insurance status

Almost three quarters of the respondents agreed that the lack of health insurance coverage is one of the three most serious consequences of statelessness and nationalitylessness. The main reason given for the importance attributed to health insurance status is the high level of financial protection available to those eligible for UCS. Stateless and nationalityless people without health insurance coverage pay out of pocket when receiving healthcare services (with clear negative implications for financial vulnerability and living standards).

"We have a serious issue with this ID card as it does not allow us to have health insurance coverage, which would help reduce medical expenditure. Hence, we remain poor and we can only work from time to time, making it difficult to make ends meet." (42 year-old nationalityless Tai-Yai)

"I paid about 6,000 to 7,000 Baht for child delivery services, while my friend who has public health insurance paid only 30 Baht." (26 year old nationalityless Akha)

Out of the 108 respondents, 25 reported that they or a household member were sick or injured in the past four weeks, of whom 17 people subsequently visited a

healthcare provider for outpatient services. All people who visited a healthcare provider incurred out-of-pocket expenditures, about THB 730 on average for medical expenses and THB 120 for transportation. Most of those who used healthcare services visited a private clinic, while only two went to a public healthcare facility to receive outpatient services. Regarding inpatient services, 20 percent of respondents said that they or a household member were hospitalized in the past 12 months. Eighteen people incurred out of pocket medical expenditure, ranging from THB 500 to THB 70,000 with an average of THB 16,000—a considerable amount given that most respondents reported a monthly household income of less than THB 15,000. In addition, average expenses for transportation to medical facilities stood at about THB 1,500. All except one visited public healthcare facilities for inpatient services, given the high cost of such services at private hospitals.

Rijken *et al.* (2015) confirms the importance of financial protection, according to which 49.6% of surveyed highlanders would find it very difficult to find money for expensive medical treatment. The introduction of the UCS for Thai citizens has decreased the incidence of catastrophic health expenditures and impoverishment due to out of pocket medical expenditures (especially for those who belong to the poorest wealth quintile). Also, the prevalence of unmet need for outpatient and inpatient services among UCS beneficiaries was reported to be very low (1.61% for outpatient services and 0.45 for inpatient services in 2010), the main barriers being time constraints to seek care, uncertainty about treatment effectiveness and distance to the healthcare facility.¹⁰

For stateless and nationalityless respondents, however, the main reasons for unmet healthcare needs are the fear of not being able to afford treatment expenses.

"We have this fear of going to public health facilities like hospitals. We do not have money and we are afraid that we will be charged a lot. Some of us used to go there, but when they saw the bill, they stopped going. They usually stay at home when sick." (30 year old nationalityless Akha)

In addition, perceived differences in quality of care based on health insurance status were found to exist, although these seem to be partially driven by language barriers and, hence, generally apply more to highlanders. As stateless and nationalityless people clearly witness the benefits Thai people enjoy under the well-known UCS whenever they seek healthcare services, feelings of discrimination and marginalization might be particularly strongly in this area

“Without an ID card, things get difficult when we go to the hospital. We do not get as good services as those who have an ID card, and we have to pay in full.” (20 year old stateless Akha)

Several respondents added that their situation (or perceived situation) led to unmet healthcare needs that, in turn, may have serious negative consequences for health.

“The staff from the public hospitals sometimes do not treat us well, which can be fatal for people who are seriously ill.” (38 year old stateless Lahu)

“We, holders of the number zero card, are not insured and cannot receive any benefits from public hospitals. We are required to visit private clinics and buy medical drugs by ourselves. Sometimes it is bad for our health.” (52 year old nationalityless Lahu)

Several respondents pointed out that language barriers, especially in case of the Lahu, and the low levels of formal education make it very difficult for stateless and nationalityless people to communicate with officials, including staff at the healthcare facilities.

“We do not speak the Thai language well, we do not know the law, and we do not have the knowledge necessary to argue with others when a problem arises.” (33 year old nationalityless Lahu)

“Some of us are not educated and then they do not know what they can do or how they should react when the news about laws related to them comes out.” (35

year old stateless Lahu)

These language barriers, low levels of education, and related discriminatory practices also affect members of the hill tribe communities who hold a Thai national identity card.

Having a negative impression about providers may also induce people covered by the HI-PCP to opt out of the public health insurance scheme. Three of the five people who said that they are covered by the HI-PCP sought outpatient care at a private clinic, where the HI-PCP cannot be used. Similarly, two of the four HI-PCP beneficiaries who received inpatient care in the past 12 months visited a tertiary hospital that is not covered and paid out of pocket.

In addition, misconceptions of the HI-PCP and its eligibility criteria could be observed.

“Without the ID card, stateless people have to pay the medical bills in full just like us. Those with the ID card starting with number 6 or 7 may perhaps hold a health insurance card, but people whose cards start with number zero like me cannot have such an insurance card and, thus, always have to pay the bills in full on our own. Sometimes we are not treated too well because we do not have the national ID card and they consider us Tai-Yai people.” (33 year old nationalityless Tai-Yai)

Yet, there seems to be some provider heterogeneity and not all providers were perceived to contribute to ethnic disparities. Several respondents said that they are grateful to providers for curing them or their family members and for educating them about how to deal with their illness or injury. Other respondents shared their positive perception of the quality of services received.

“I visited the doctor because of a road accident. The overall experience was good. They took good care of me, and it was useful as I know how to clean my wounds now.” (19 year old nationalityless Lahu)

It is important, however, to bear in mind that public healthcare providers have faced substantial financial

constraints and a heavy workload since the introduction of the UCS—especially in border areas where free healthcare services are often provided to non-Thai people for humanitarian reasons. In addition, civil service positions are tied to the number of people registered in a specific area, even though stateless people cannot be registered. Hence, public providers may simply not have the resources to deliver healthcare services that are culturally and linguistically more appropriate. To provide more adequate healthcare services, migrant health volunteers have been employed in border areas and similar initiatives have been launched to support stateless and nationalityless people.¹¹

Mobility and healthcare

Mobility restrictions suffered by the stateless and nationalityless are seen to hinder their access to health services. People who are “exempted to temporarily stay in Thailand pending determination of their legal status” are restricted to stay in the province where they are first registered. Fines are imposed if caught travelling without permission (which may be granted by the district office on a case-by-case basis). Living in constant fear of being caught and arrested by the police, stateless people are particularly affected by a lack of freedom to travel—making it more difficult to reach essential health services.¹²

“Limited freedom of movement is a serious issue. We do not want to leave home for fear of being caught by the police. I think this is a common issue among the stateless.” (35 year old stateless Tai-Yai)

“When we want to travel across the country, we want to do it easily. It would be ideal for us if we had the 13 digit Thai ID card once we come across any checkpoint, so we do not have to apply for the permit and the like. We would like this freedom that Thai people have, to be able to travel freely since we also live in this country.” (24 year old nationalityless Akha)

Respondents also pointed out that arbitrary displays of power by the police and border patrol exacerbate their

mobility restrictions.

“Travelling is a problem. We are afraid even to go to the hospital. The police might arrest us. We live so high up in the mountains that organizations who came to help could not find us. We are illiterate and poor; we cannot communicate in Thai.” (26 year old nationalityless Lahu)

“When we travel and run into a checkpoint, we have no choice but to do whatever they tell us to do. We cannot make our case since we have no ID card.” (33 year old stateless Akha)

“Without the ID card, sometimes we are fined by the police on our way to the hospital, and after paying the fine, we cannot pay for the medical care.” (49 year old nationalityless Lahu)

Conclusion

Thailand has one of the largest stateless populations in the world, despite decades of efforts to tackle this complex issue. In the Thai context, a distinction is made between nationalitylessness and statelessness, but both are associated with cumulative human rights violations, albeit to a different degree. Excluding the stateless and nationalityless is not only damaging in terms of human development, but may also threaten peace and security.

Yet, much progress has been achieved in the past 15 years, especially also in terms of human resources development. In 2005, Thailand’s policy to provide free education for 15 years, was expanded to include all children, irrespective of their citizenship status. Five years later, the HI-PCP was launched to restore basic health rights and provide health insurance coverage to people with citizenship problems. Manifold challenges have remained though, especially in terms of healthcare services and health insurance coverage.¹³

While stateless and nationalityless respondents are exposed to several daily environmental stressors, some such as waste management, alcohol, and drug problems, as well as landlessness were attributed to their communities or the ethnic group rather than their

citizenship status. Almost three quarters of the respondents, however, identified the lack of health insurance coverage as one of the most serious consequences of statelessness and nationalitylessness. The negative effect of catastrophic health expenditures is well known and the findings of this article underline the importance of financial protection. Experiences of discrimination at healthcare facilities, confusion about HI-PCP entitlement and the fear of harassment by the police when travelling were found to exacerbate the situation and result in unmet needs for healthcare.¹⁴

Although the ultimate solution to ease the plight of stateless and nationalityless people in Thailand is granting citizenship, the pace of resolving citizenship status problems has remained sluggish. Given the achievement of universal health coverage for Thai citizens and a relatively strong public health infrastructure, it appears feasible and politically viable to address the healthcare plight of Thailand's stateless and nationalityless population (especially if coupled with an easing of mobility restrictions). This in turn would decrease inequality and so mitigate its threat to security and peace.

Notes

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1. Numbers: The UNHCR's statistical reporting captured 3,851,983 stateless persons at the end of 2018; accounting for data collection gaps, however, the UNHCR (2019) estimates that there are actually more than 10 million stateless persons worldwide; UNICEF Thailand. Nationalitylessness definition: Saisoonthorn, (2006); Boonrach (2017). Legal nationality: Kingston, Cohen and Morley (2010). Threat: Brock (2011); Gibney (2008). Inequalities: Brown (2008); Brown and Langer (2010); Buhaug *et al.* (2011); Østby (2008); Østby, Nordås and Rød (2009); Stewart (2008). Discrimination: Brown and Langer (2010); Gibney (2008). State actions: Brown (2008); Croissant (2005). Focus: Apidechkul *et al.* (2016); Ezard *et al.* (2011); Reed *et al.* (2012); Riley

et al. (2017).
2. Populations: Boonrach (2017); UNHCR (2019). Registration: Flaim (2017); Saisoonthorn (2006); Enumeration: Pesses (2007); Rijken *et al.* (2015). Distinction: Wittayapak (2008). Nationality laws: Saisoonthorn (2006). Distrust: Cooper (1979). Threat: Englehart (2008); Park, Tanagho and Gaudette (2009); Race (1974); Toyota (2007). Parents: Pesses (2007); Saisoonthorn (2006). Identification: Toyota (2007). Cards: Laungaramsri (2014). Conflicts: Toyota (2007); Wittayapak (2008).
3. Pathways: Brzoska and Fröhlich (2016). Refugees: Salehyan and Gleditsch (2006). Tensions: Akokpari (1998); Salehyan and Gleditsch (2006).
4. Residential: Pongsawat (2007). Distinction: McKinnon (2005). Movement: Morton (2016). Stateless: Strategy: Boonrach (2017); Rijken *et al.* (2015). Nationality: Boonrach (2017). Rate: Tamee (2015). Improvement: Kongrut (2019). Estimated: Boonrach (2017); Kingston, Cohen and Morley (2010); UNHCR (2020). Prevent: Flaim (2017); Pesses (2007). Problems: The results of a study using data from focus group discussions conducted in 2007 with 29 stateless and nationalityless Karen people, documented in Pesses (2007). Difficulties: Rijken *et al.* (2015).
5. Card: Harris (2013); Pannarunothai *et al.* (2000). HI-PCP: Suphanchaimat *et al.* (2016a); Suphanchaimat *et al.* (2016b). Challenges: Suphanchaimat *et al.* (2016a).
6. Minorities: Ministry of Social Development and Human Security (2015). Karen: Flaim (2017). Sino-Tibetan: Flaim (2017); Schliesinger (2000). Tai-Yai: Ministry of Social Development and Human Security (2015).
7. Challenges: Suphanchaimat *et al.* (2016a) using data obtained from individual and group interviews with 33 healthcare providers, conducted in Ranong and Tak provinces between October 2012 and June 2013. Both empirical articles (Barua and Narattharaksa (2020) and Suphanchaimat *et al.* (2016b)) identify HI-PCP beneficiaries on the basis of the first digit of their ID. It is important to bear in mind though that whether holders of an ID that starts with 0 are covered by the HI-PCP or not also depends on digits 6 and 7 of their or their parents' identification number (Table 1). Study: Suphanchaimat *et al.* (2016b) using 2009, 2011 and 2012 inpatient utilization data from one public hospital in Ranong province. Utilization: Barua and Narattharaksa (2020).
8. Pesses (2007); Rijken *et al.* (2015). Mobility

restrictions, less job opportunities and poverty were the three most often cited serious consequences of statelessness in Rijken *et al.*

9. Flaim (2017).

10. Expenditures: Evans *et al.* (2012); Limwattananon *et al.* (2015); Prakongsai, Limwattananon and Tangcharoensathien (2009). Time: Evans *et al.* (2012); Thammatacharee *et al.* (2012).

11. Constraints: Thaiprayoon and Wibulpolprasert (2017). Civil service: Suphanchaimat *et al.* (2016a). Initiatives: Sirilak *et al.* (2012); Suphanchaimat *et al.* (2016a).

12. Boonrach (2017).

13. UNICEF Thailand (2019).

14. Akazili *et al.* (2017); Bredenkamp, Mendola and Gragnolati (2010); Xu *et al.* (2003).

15. At the time of writing, the Author is in the process of publishing the results of the study as "Statelessness, nationalitylessness and mental health among the Lahu, Akha and Tai-Yai in Chiang Mai province, northern Thailand".

16. NSO (2019).

17. Schrock *et al.* (1970).

18. Mountainous: Saihoo (1963). Tai-Yai: Englehart (2008); Race (1974). Trading: Schrock *et al.* (1970).

19. Pesses (2007); Rijken *et al.* (2015).

20. Flooding: Toyota (2005); Vandergeest and Peluso (1995). Limited: Pungprasert (1989); Toyota (2005).

21. Rijken *et al.* (2015)

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Appendix A: Methodology

The study behind this article uses a subset of the data collected for the research project on “Statelessness, nationalitylessness and mental health among the Lahu, Akha and Tai-Yai in Chiang Mai province, Northern Thailand”. Semi-structured interviews were conducted in June 2020. The closed-ended questions aimed at eliciting standard information about the demographic and socioeconomic characteristics of the respondents, as well as self-reported mental health, daily environmental stressors, healthcare utilization and health literacy. An adapted version of the daily environmental stressors scale designed by Riley et al. (2017), which draws on the HESPER scale, was employed to identify the most serious problems stateless and nationalityless people are facing. The HESPER scale is a tool to assess perceived needs in a population. While the focus is on people affected by large-scale humanitarian emergencies, it can also be used in chronic humanitarian situations. For the purpose of this study, problem areas specific to displaced people such as “fair access to services in the camp” were replaced with context-specific issues (based on a review of the relevant literature), such as “land rights”. Open-ended questions were subsequently employed to deeply explore the nature of daily environmental stressors associated with statelessness and nationalitylessness. Some of these are based on the HESPER scale questions about other serious problems and the HESPER scale priority rating for serious problems. The daily environmental stressors and healthcare utilization data were used for this research article.¹⁵

The data were collected from 108 stateless and nationalityless adult household heads, who belonged to the Lahu, Akha or Tai-Yai ethnic groups. A total of eight villages in Chiang Mai province, where most stateless people are living, were selected purposively from existing records of a non-governmental organization (NGO) working with ethnic minorities in Chiang Mai and supporting their citizenship applications. Using quota sampling, the aim was to include 54 stateless household heads and 54 nationalityless household heads. Only household heads (or their representatives) were included as these are assumed to possess healthcare decision-making autonomy. Thirty-six household heads were selected from each of the three ethnic groups. Stateless and nationalityless household heads in each village were identified purposively, with the help of the NGO and their key contacts in the communities. In villages where the stateless household head quota could not be filled, nationalityless household heads were interviewed instead. Covid-19 related travel restrictions, limited the data collection to one district.

Prior to each interview, written consent was sought. To ensure confidentiality, neither names of individuals nor villages were recorded. Each interview took about one and a half hours to complete with participants receiving 100 Thai Baht (THB) for taking part in the research as a compensation for the time spent answering questions. Subject to approval by participants, interviews were recorded. Responses to open-ended questions were transcribed and translated into English. Five respondents did not feel comfortable having the interview recorded and only field notes were taken by the interviewers. All interviewers were recruited from the three ethnic groups and trained prior to the data collection. During the interviewer training, the participant information sheet and the questionnaire were translated into the local languages (i.e., Lahu, Akha and Tai-Yai). Interviews with respondents, who preferred to speak the language of their ethnic group, were subsequently conducted bilingually and answers to the open-ended questions were translated on the spot into Thai by the interviewers.

Ethical clearance was obtained from the Research Ethics Review Committee for Research Involving Human Research Participants, Group I, Chulalongkorn University on March 5, 2020 (certificate of approval number 114/2020). Permission to reproduce, reprint or translate the HESPER scale was granted by the WHO on May 17, 2020.

A mixed methods approach was chosen. Responses to the closed-ended questions were examined using simple descriptive statistics, while the qualitative data were analyzed using thematic analysis. Qualitative data analysis software (NVivo) was employed to code the data using an inductive approach to identify themes within the most

important categories of environmental stressors.

Of the 108 respondents, 59% are registered with the Ministry of Interior (that is they were nationalityless and held an identification card starting with zero), while 41% were stateless. About 55% were male and respondents were young on average (38 years). About two thirds had not received any formal education and more than 80% work as day laborers. Rijken *et al* (2015) reported that 78% of stateless and nationalityless highlanders did not receive any formal education compared to 54% of citizens. Less than five% of respondents who participated in this study reported having a monthly household income of more than THB 15,000 (about USD 485), while the corresponding percentage for the entire country stood at 61% in 2019. The average household size is about 4.8 people. About 35% were Buddhists, most of whom belong to the Tai-Yai ethnic group. The remaining respondents were mainly Christians.¹⁶

The findings are subject to several caveats. Instrument translation and translations of the verbatim transcriptions may be prone to translation errors (although professional translation services were used). Further translation errors might have been introduced by the interviewers, who translated questions and responses from Thai into the languages spoken by the three ethnic groups and vice versa. However, audio recordings of interviews conducted bilingually were subsequently cross-checked. As non-probability sampling methods were used, it is important to point out that the results of this study are not representative of the target population and cannot be generalized. Also, the sample size is rather small due to budget constraints. Moreover, as respondents were purposively selected from existing records of an NGO working with ethnic minorities to support citizenship applications, they might be more aware of the consequences of being stateless or nationalityless than others. Last, but not least, it is important to bear in mind that the Lahu, Akha and Tai-Yai are not homogeneous groups in themselves, but that there are several subgroups within each ethnic group.¹⁷

Appendix B: Further discussion of environmental stressors face by the Lahu, Akha and Tai-Yai ethnic groups

This appendix builds on the brief summary of the environmental stressors reported by the sample and illustrated in Table 3 in the “Environmental stressors” section of this article.

Compared with the Lahu and the Akha, the Tai-Yai are less exposed to environmental stressors. The Lahu and the Akha ethnic groups typically live in mountainous areas and in the past were among the main opium-growing tribes in Thailand. The Tai-Yai are considered more closely related to Thai people in the lowlands than the highlanders as they are often Buddhists and wet rice cultivators. The Akha and Lahu, on the other, are associated with dry-rice cultivation, given that they reside in higher altitudes. In contrast to the Akha and the Lahu, who relied on slash-and-burn agriculture, the Tai-Yai were more involved in trading. The closer proximity of the Tai-Yai to lowland Thai people may also explain why research related to statelessness mostly focuses on hill tribes.¹⁸

Problems with waste management as well as alcohol and drug use were viewed by respondents as problems of their communities rather than consequences of statelessness or nationalitylessness, the latter being contrary to the findings in Rijken *et al* (2015).

“We lack proper trash bins, and we have no idea how to sort waste, which results in trash being scattered all around the village and on the road.” (55 year old nationalityless Lahu)

“The most serious issue for Lahu people are drugs given that drugs are easy to find both in our village and elsewhere. People are likely to turn to drugs when facing any problems, which makes it a huge issue that everyone has to work together to cope with.” (20 year old nationalityless Lahu)

Almost three quarters of the respondents agreed that the lack of health insurance coverage is one of the three most serious consequences of statelessness and nationalitylessness. Mobility restrictions were considered by two thirds as

one of the most serious issues, while about half of the respondents pointed to the lack of rights to land. Less agreement was observed regarding the severity ranking of other environmental stressors.

Neither nationalityless nor stateless people have the right to hold land in Thailand. Yet, respondents pointed out that issues surrounding land rights primarily affect ethnic groups in general. Poverty, landlessness, and ethnicity are considered to be deeply intertwined (in line with the findings of the literature).¹⁹

“Some villagers like us do not possess any land. They need to trespass and live on other people’s land. If the owner of such land finds out and chases them away, they have no choice but are forced to move out. Some do not have land for commercial purposes since they cannot afford to buy any. Then, they cannot earn a living and eventually stay poor and underprivileged. There are quite a lot of these people in the village. Each one of them does not possess any land and they have been suffering a lot from this.” (30 year old nationalityless Akha)

Moreover, with increasing awareness of the severity of deforestation in Thailand at the end of the 1980s, hill tribes were increasingly blamed for cutting down trees and being involved in commercial logging. After the 1989 flooding, a logging ban was introduced and a protected area system based on the 1985 national forest policy, which reclassified forest reserves as conservation forests and economic forests, was adopted in 1993. These measures *de facto* limited the livelihood of hill tribes, who have traditionally relied on slash-and-burn agriculture. The land used by hill tribes today is often located in areas for which land ownership title deeds are not issued. Some may hold land use rights in certain areas, but land tenure is insecure.²⁰

“The lack of land rights is an issue because without the title deed certificate, there is no land to work on, making it difficult to earn a living.” (49 year-old nationalityless Lahu)

Mobility restrictions are felt to reinforce the disadvantages stateless and nationalityless respondents are facing since they cannot easily seek out opportunities outside their areas, especially in terms of employment, and, hence, to confine them to a low socio-economic status (in line with existing literature). Stateless and nationalityless people who decide to leave their areas in order to make a living are at risk of exploitation if they do not possess the necessary permission. This in turn translates into frustration, hopelessness and further marginalization given the protracted nature of their situation.²¹

“A national ID card is the most basic thing to have because it is a necessary item in daily life. ... Without an ID card, a person cannot do anything, just like a dead person.” (47 year old nationalityless Lahu)

Poverty and conflict in Thailand's Deep South

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Abstract

Thailand's so-called Deep South has experienced much deadly violence since the early 2000s. This article investigates its determining factors in the context of the larger civil unrest/civil war literature—work on Southeast Asia being sparse and work on Thailand almost non-existent. The focus is on 37 sub-provincial districts of four of Thailand's 77 provinces covering the years from 2012 to 2019. Centering on descriptive statistics with additional panel regressions, it is found that reduced poverty incidence, increased educational attainment for males, and increased district-level per capita income are all associated with reduced conflict intensity (a smaller number of conflict-related deaths). In contrast, ethno-religious backgrounds and certain geographic features are not associated with either increases or decreases in conflict-related deaths.

Thailand's "Deep South" is predominantly populated by Malay-Muslim people (the majority of Thais identifying as Buddhists). Consisting of 4 provinces (out of 77), the region has been restive for many decades, and ongoing violence since the early 2000s has cost over 7,000 lives. This has resulted in a state of overt military presence, surveillance, and interference in daily life not seen anywhere else in the country. This article examines the region's politically motivated violence by drawing on the literature on the economics of civil war. It finds that reduced poverty incidence, increased educational attainment for males, and increased district-level per capita income are all associated with reduced conflict intensity as measured by a smaller number of conflict-related deaths. In contrast, ethno-religious background and certain geographic features are not associated with either increases or decreases in conflict-related deaths.

The next section of this article provides a political and economic background to the Deep South. This is followed by a brief review of the literature and descriptively and analytically tests its relevance to the Thai context. The final section concludes by reprising the key themes of this article.

Thailand's Deep South

Thailand's southernmost region spans the provinces of Pattani, Yala, and Narathiwat as well as some parts of Songkhla (see Figure 1). Often referred to as the country's Deep South, it is a region in which a tense relationship between Thai security forces and Malay Muslim communities can be traced back to the beginning of the 20th century when the Muslim sultanate of Patani was forcibly incorporated into Thailand. With its distinctive historical background and ethno-linguistic and ethno-religious identity, the region is home to more than 2 million people, mostly Muslim, and accounts for about 3% of Thailand's Buddhist-centric total population.¹

Despite long-standing misgivings, it was not until early 2004, when a group of people seized a large number of weapons from one of Narathiwat province's military camps, that the simmering conflict escalated into open violence. According to the NGO Deep South Watch (DSW), between January 2004 and August 2020 around 20,000 incidents have been recorded, leaving about 7,000 people dead and 13,000 injured. The number of such incidents at first declined only gradually but then saw a sharp drop in 2008 due to a Thai policy of

increased military and special law enforcement presence (as well as increased security expenditure). An additional large decrease in incidents is observed after 2013 when a peace process was established (see Figure 2).

Of all the conflict-related incidents, those caused for identifiably separatist motives dropped from about 70% in 2013 to about 47% in 2019. Even though the total number of incidents is dropping, the large percentage with unidentified causes creates uncertainty among the regions' people, and skepticism over just who the perpetrators are.

A note on language, the term "incident" means incidents with casualties as well as casualty-free events. Further, the press, and at times scholars, refer to an "insurgency" and to "insurgents." These are politically-laden terms since, as noted, much of the region was taken by force and "insurgents" are often simply Deep South local people whose ancestors inhabited the land before it was taken. That said, there are suggestions that at least some perpetrators have permanently fled or temporarily slipped across the modern-day, densely forested, and generally ill-patrolled Thai-Malay border—from where they return to stage attacks.

Annual per capita income in the Deep South is only approximately THB 77,000 (USD 2,400)—in Narathiwat province it is only THB 62,000 (USD 2,000). In contrast, Thailand's average gross provincial product (GPP) per capita in 2018 was THB 237,000 (USD 7,500). Figure 3 shows the incidence of poverty across three of region's four provinces (Songkhla is not included as some districts of this province are relatively rich). Narathiwat and Pattani have been among Thailand's 10 poorest provinces (out of 77) for more than a decade. Other provinces in the South are relatively prosperous, which has overshadowed the Deep South's need for economic assistance. That said, Figure 4 shows that the depth of the poverty in the Deep South has resulted in the South (as a whole) having the Kingdom's highest rate of

Thailand's Deep South has experienced much deadly violence since the early 2000s. Examination of the region reveals that reduced poverty incidence, increased educational attainment for males, and increased district-level per capita income are all associated with reduced conflict intensity. Despite often-touted opinion, ethno-religious background is not significant.



Figure 1: Map of Thailand's Deep South.

Source: <https://www.blackpeakgroup.com/2019/06/security-risks-in-southern-thailand-from-origins-to-current-situation/>.

poverty incidence (making little to no progress over the past 10 years).

Literature review

In 1998 Collier and Hoeffler published "On Economic Causes of Civil War" which became the touchstone for the ensuing "greed versus grievance" debate among scholars and policymakers. The article posits that low

opportunity costs may prompt impoverished young men to join a rebel movement. This, in part, led to the formulation of a “conflict trap” theory that holds that poverty and conflict not only are inextricably linked but that they create a mutual feedback loop, resulting in: Destruction of infrastructure; elevated security risks; and declines in education, economic activity and well-being. The theory was further developed to include an increased likelihood of a given conflict’s continuation, recurrence, escalation, and diffusion. The trap is most serious for low-income countries.

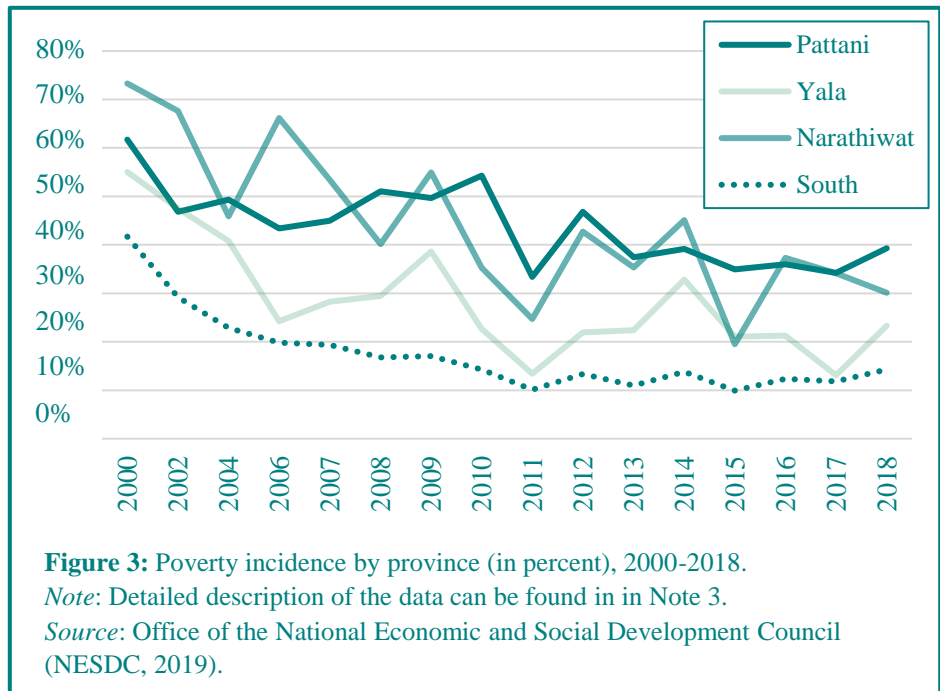
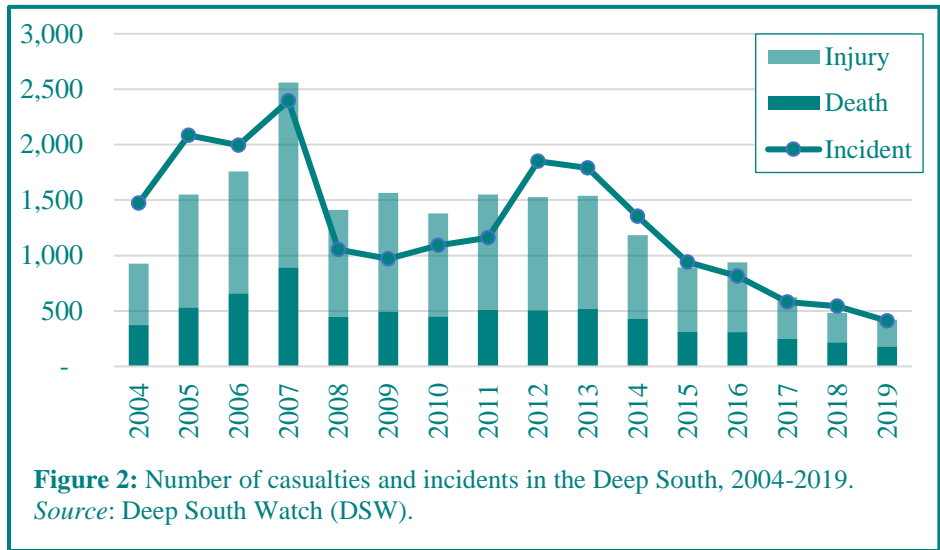
Despite the bi-directional relationship between poverty and conflict noted in the literature, this article is interested only in the direction from relative socioeconomic deprivation to violent conflict. The literature has pinpointed several relevant factors that are briefly discussed in the following subsections, namely poverty, general economic conditions, education, ethnoreligious-linguistic polarization, and geography.

Poverty

This article has indicated the high incidence of poverty in the Deep South. Among the pioneering studies pointing to poverty as one of the defining causes of civil war, Fearon and Laitin (2003) finds that, on average, the odds of civil war onset increase by 41% for each USD 1,000 reduction in per capita income. More specifically, a country at the 10th percentile of per capita income has an 18% chance of civil war, a median per capita income country has an 11% chance, and only 1% for a country at the 90th

percentile.

Likewise, Do and Iyer (2010) finds that the number of casualties per 1,000 population during the Maoist conflict in Nepal was strongly associated with the poverty rate and related socioeconomic development indicators such as the infant mortality rate, literacy, and road length. Poverty, in particular, was a strikingly relevant indicator for both the emergence of conflict and death rates in Nepali districts. A district with a 60% poverty rate was 1.5 times more prone to reach 100



conflict deaths than a district with a 26% poverty rate. For every 10% increase in the poverty rate, a district experienced around 26 additional conflict-related deaths per 1,000 people.⁴

Economic conditions

Thailand is not commodity-export dependent and therefore has little to no foreign-exchange earning vulnerability to commodity price shocks (a subject much covered in the literature). Berman and Couttenier (2014), however, concludes that while external income shocks can have an insignificant effect on the likelihood of instigating conflict, they affect the occurrence of conflict in the most trade-open regions. This point might be relevant to a tourist-dependent Thailand, but it does not apply to the Deep South, which sees little tourism (despite its natural beauty)—a point briefly addressed in the conclusion section.⁵

Instead, this article focuses on a broad GDP-related measure. Although there is a consensus that GDP per capita and conflict are inversely correlated, the mechanism that drives the correlation is still debated. Fearon and Laitin (2003) states that poorer countries do not have the resource to suppress conflict when it arises. Collier, Hoeffler, and Soderbom (2001) indicates that conflict is enabled by lower opportunity costs for individuals in states with lower per capita income. Between these positions, Dube and Vargas (2013), for example, finds that both mechanisms were present in the long-running Colombian conflict. It is plausible that the Deep South's long-standing and pervasive poverty as well as generalized low per capita income are related to the region's ongoing conflict.

Education

Good quality education equips people with knowledge

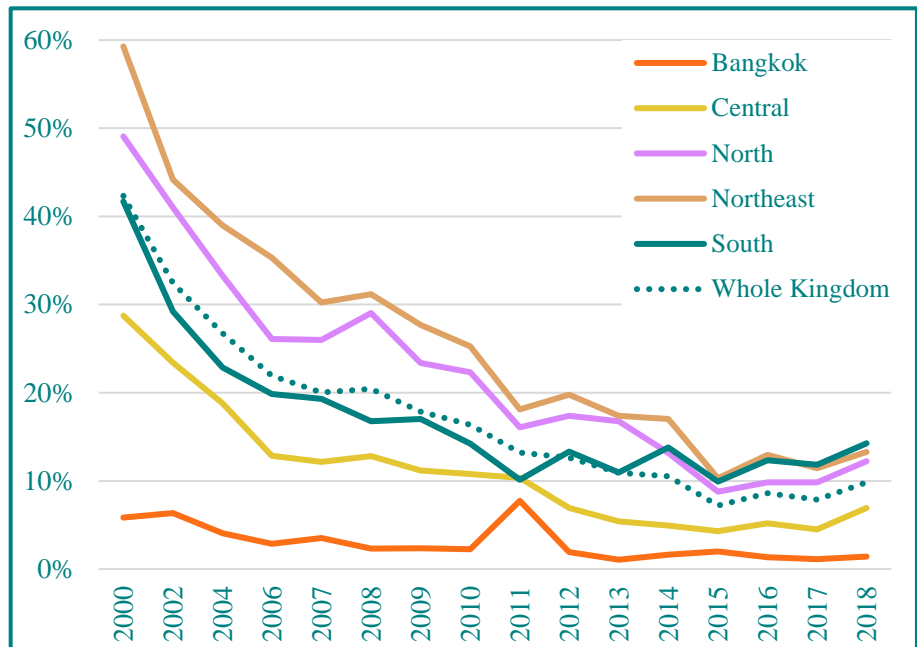


Figure 4: Poverty incidence by region (in percent), 2000-2018

Note: Detailed description of data in Note 2.

Source: Office of the National Economic and Social Development Council (NESDC, 2019).

and skills that widen their market opportunities. In general, educated people are more able than others to form their own views and judgements, thereby possibly reducing their scope for manipulation by conflict initiators. Agbor (2011) points out that individuals and societies can, in time, become more conflict resilient and that children can learn tolerance, respect differences, and become more empathic toward others. Similar to the Do and Iyer (2010) findings on literacy, Collier, Hoeffler, and Soderbom (2001) finds that education measures and performance (such as an increase in male secondary school completion rates) are revealed to have significant conflict prevention or mitigation effects in the early stages of conflicts—i.e., an increase in education substantially reduces the expected duration of a conflict. However, the mitigating influence of education diminishes as conflicts wear on, possibly due to the educated demographic emigrating to non-conflict areas.⁶

Later this article illustrates the lack of male education in the Deep South and examines its relationship with conflict.

Ethnoreligious-linguistic polarization

Polarization across ethnoreligious-linguistic groups has attracted the interest of many researchers—in part because of its potential to explain a variety of social phenomena including social tension, unrest, revolution, and war. Esteban and Ray (2008) observes that “traditional” income class-based conflict (the “rich” versus the “poor”) appears, in recent decades, to have been almost supplanted by conflict couched in ethnoreligious-linguistic terms. They suggest that income heterogeneity within income classes is smaller than is income heterogeneity within ethnoreligious-linguistic groups. This, in turn, they suggest, allows the “rich” *within* a given ethnoreligious-linguistic group to financially induce the “poor” of the same group to supply cheap labor and engage in cross-group conflict with the aim of gaining increased or full access to national-level resources (or resource distribution). Since then, numerous empirical studies have included ethnoreligious-linguistic measures, with as yet inconclusive findings.

Given that the Deep South is dominated by a Malay-Muslim population, whereas most of the remainder of the country is Thai-Buddhist, such polarization is included in this article’s analysis.

Geography

The literature has come to routinely take geography and, especially, topography into account, the reason being that difficult-to-access territory can effectively serve as a safe haven for rebels to hide in, bide their time, and prepare future attacks. Researchers often include variables related to forest coverage and mountainous terrain. For example, Collier, Hoeffler, and Soderbom (2001) states that a country with average forest cover experiences longer-lasting conflict than those with little forest cover (or mountains). Similarly, Fearon and Laitin (2003) finds that a country that is about 50% mountainous (in the 90th percentile), with median-level parameters otherwise, has a 13.2% chance of civil war onset over the course of a decade. An otherwise “identical” country has only a 6.5% chance on war onset if it is not mountainous (in the 10th percentile). On a

cautionary note, however, Pickering (2011) warns against using a broad statistical brush to paint all “mountain people” as bellicose.⁷

Without sufficiently granular district level topographic/forestry data, this article uses the nature of a district’s border as a proxy for provision of hidden insurgent access.

Data and methods

A panel dataset was constructed that included the 12 districts of Pattani, the 8 districts of Yala, the 13 districts of Narathiwat, and 4 of the 16 districts of Songkhla. The data covers the 8 years from 2012 to 2019. Data on conflict-related incidents are drawn from DSW. Further data came from the Information System for Basic Minimum Needs (BMN), compiled by the Department of Community Development in the Ministry of the Interior. Descriptive statistics were generated to provide summative background information and to provide some initial insights. Exploratory fixed-effects, random-effects, and between-group means regressions helped to distinguish any unobserved characteristics that may affect conflict incidents in the Deep South (varying across districts as well as across time periods). The term “exploratory” is used due to the short timespan covered by the data. The resulting findings do not run counter to intuition.⁸

The estimated model takes the following form:

$$(1) \quad \text{Conflict intensity}_{it} = \beta_0 + \beta_1 X_{sit} + u_i + e_{it},$$

where *Conflict intensity* is the number of deaths per 1,000 people per district *i* (*i* = 1, ..., 37) at time *t* (*t* = 2012, ..., 2019). *X_s* reflects a set of characteristics, namely: Poverty incidence; education level of the male population; per capita income; an ethno-religious polarization index; and whether a given Deep South district is bordered by the sea and/or is adjacent to Malaysia. β_0 is a constant term, β_1 is a regression coefficient, *u* denotes a fixed effect of district *i*, and *e* denotes an error term that contains the effect on district *i* and time *t*. Note that except for time-invariant variables like geography, one-year lagged explanatory variables are used in accordance with the extant literature.

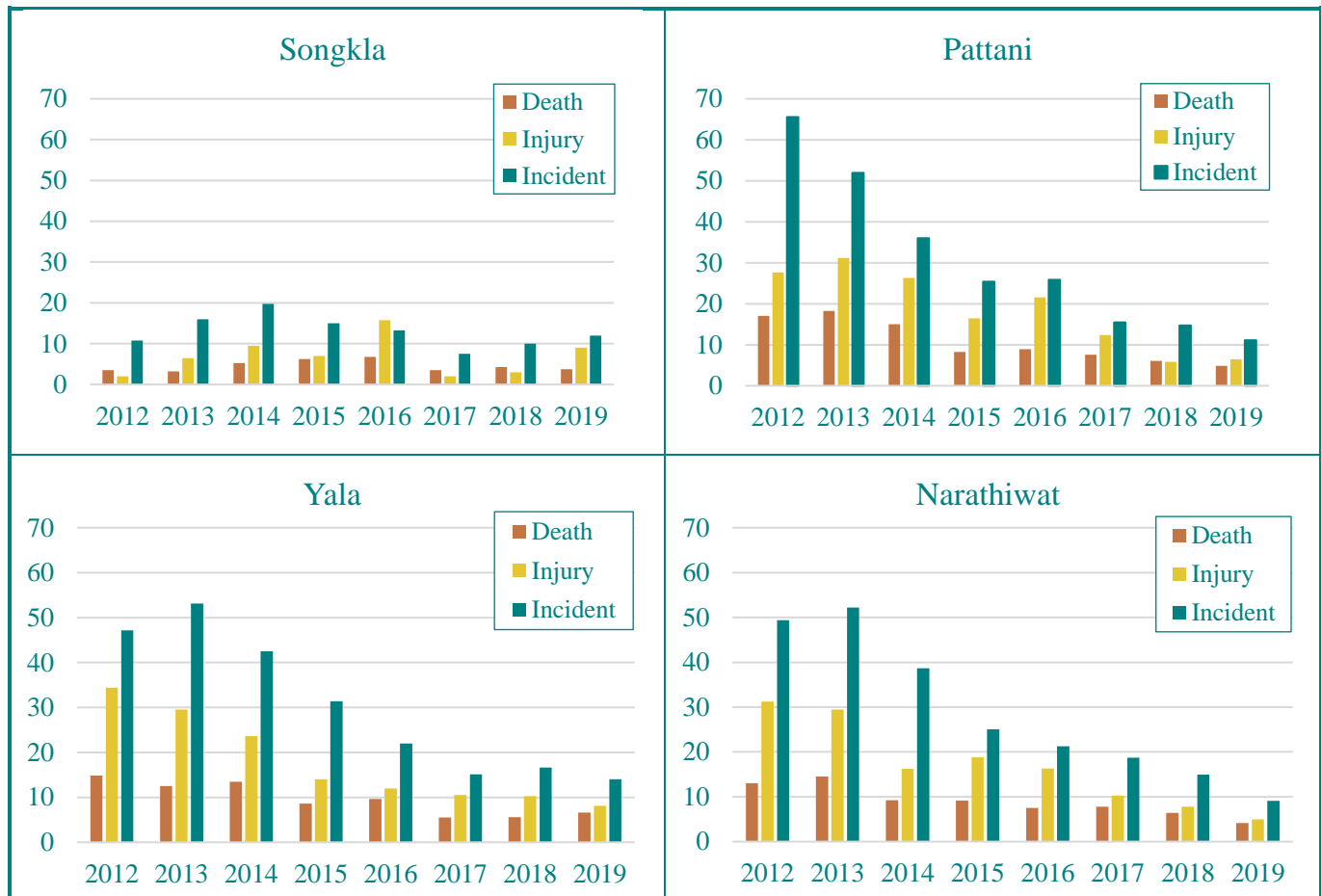


Figure 5: Number of deaths, injuries, and incidents by province, 2012–2019.
 Source: Deep South Watch (DSW).

Descriptive statistics

Yala province has the largest number of incidents. Figure 5, however, shows that the number of deaths and injuries are highest in Pattani province, suggesting a more intense conflict situation there. In all, the 37 districts located in the Deep South experienced an average of 0.2 conflict-related deaths per 1,000 people between 2012 and 2019, equating to about 9 deaths per year (see Table 1). Nevertheless, the variation in deaths across these districts is large, with the highest intensity of 1.28 deaths per 1,000 population, or 22 deaths annually, observed in the Kapho district in Pattani province in 2012. In contrast, the Nathawi district in Songkhla province has a near zero per 1,000 people (equivalent to 2 deaths annually).⁹

Poverty is measured as the percentage of households

with annual household-based per capita income below THB 30,000 (USD 950) for 2012–2016 and THB 38,000 (USD 1,200) for 2017–2019. As already shown, the South as a whole is the poorest region of Thailand and, within the South, Pattani province is the poorest of all. The poverty surge observed in these provinces in 2017 is the result of the 2017 poverty income threshold increase. A steady reduction in the average poverty rates thereafter indicates some absolute improvement since then, but still not relative to the nation as a whole.¹⁰

Turning to education in the Deep South, less than a quarter of males have completed secondary education (or higher). The highest proportion is in Songkhla province (25.2%) and the lowest in Narathiwat province (22.1%). However, province-level averages hide substantial

Table 1: Descriptive statistics

<i>Variable</i>	<i>Description</i>	<i>Obs</i>	<i>Mean</i>	<i>Std Dev</i>	<i>Min</i>	<i>Max</i>
Conflict intensity	Number of conflict-related deaths per 1,000 population	296	0.1962	0.1704	0.0000	1.2819
Death	Number of conflict-related deaths	296	9.2095	7.9518	0.0000	46.00
Injury	Number of conflict-related injuries	296	16.5101	19.6702	0.0000	165.00
Incident	Number of conflict-related incidents	296	27.9932	25.5148	2.0000	149.00
Population	Number	296	50,202.7	22,204.5	11,979	100,633
Poverty	Proportion of households with per capita income* > THB 30,000 for 2012-2016 > THB 38,000 for 2017-2019	296	0.8922	1.1964	0.0000	7.1700
Male schooling	Proportion of males who have attained secondary education or higher	296	23.2286	5.4103	10.4000	40.3800
Income	Household per capita income	296	57,082.9	9,656.1	37,284	94,383
ln(Income)	Natural log of household per capita income	296	10.9389	0.1620	10.5263	11.4551
Polarization	Ethno-religious polarization index**	296	0.4659	0.3446	0.0072	0.9949
Sea	Dummy variable for a district located by the sea	296	0.2703	0.4449	0.0000	1.0000
Malaysia	Dummy variable for a district adjacent to Malaysia	296	0.3243	0.4689	0.0000	1.0000

Notes: * See note 10, where “household per capita income” is explained. **The index is computed as $4 \sum s_i^2 (1 - s_i)$, where s_i is the proportion of religious group i in the population.

variations across districts; especially so in Yala province, where district variation ranges from 40.4% to just 11.3%. In sum, poor and un/undereducated males generate a potential pool of “conflict workers” due to the, presumably, low opportunity cost of engaging in conflict activities. This impression is reinforced by the income averages that reveal the Deep South is, again, Thailand’s laggard.

In 2019, Narathiwat, Pattani, and Yala, respectively, had average per capita incomes of THB 56,436 (USD 1,792), THB 61,058 (USD 1,938), and THB 65,584 (USD 2,082), and thus were the first, the third, and the sixth poorest provinces—in contrast, the highest provincial per capita income is THB 152,801, while the average is THB 81,280.¹¹

As mentioned, the Deep South’s majority population

is Malay-Muslim. In contrast, their nation-wide population share is rather small (about 2 million, out of about 66.5 million people in Thailand). Surprisingly, however, the descriptive data show considerable variation in the ethno-religious polarization index, which measures the degree to which individuals in a population are “mixed” across different ethno-religious groups. Across the 37 districts, a minimum value of just 0.007 (almost no mixture) is found with a maximum value of 0.99 (a very thorough mixture). In particular, the four districts in Songkhla province in the dataset score average polarization indices as high as 0.91, implying far more diverse ethno-religious groupings there.

Finally, geographic features like forest coverage and mountain ranges are mentioned in the literature as potential “hide-outs” and refuges for people perpetrating acts of violence. Unfortunately, while easily accessible satellite image maps show very densely forested mountains and sparse road networks across the Deep South, quantified data on forest cover or mountainous terrain at the district level are so limited that they could not be used. Instead, information on whether a district borders on the sea and/or shares a land border with Malaysia was used. There are plenty of media reports about insurgents slipping back and forth across the Thai-Malay border. Of the 37 districts, 10 are bordered by the sea and 12 are adjacent to Malaysia.¹²

Empirical results

Turning to the exploratory panel regressions, the number of deaths, injuries, and incidents against poverty incidence were plotted across time. A positive correlation between conflict and poverty is easily observed in the earlier years of the dataset, regardless of the choice of conflict variable, but the relationship vanishes toward the latter years (see Figure 6). This suggests the presence of time-variant factors underlying the poverty-conflict relationship. While the descriptive data show considerable variation across provinces and districts, data on time-variant district-level variables are limited. Nonetheless, exploratory panel regressions were attempted to learn, if nothing else, if they clearly refuted the descriptive impression about a link between relative

socioeconomic deprivation, education, geography, and violent conflict.

A Hausman test suggests the use of a fixed-effects regression model as more appropriate than a random-effects model. But since a fixed-effects model cannot deal with dummy variables, a between-regression model was also run to help capture the potential influence of geography in particular. So, in all, three models were run, a fixed-effects (within) regression, a random-effects (multiple) regression, and a between-group means (between) regression. Table 2 summarizes the results that, overall, suggest that a district with a low level of socioeconomic development in a previous year experiences intensified violence in a follow-on year (relative to districts that show a higher level of socioeconomic development and achievement).¹³

The between-group means regression in particular records a positive relationship between poverty incidence and the intensity of conflict. Specifically, a 1 percentage point increase in a district's poverty rate in a previous year is associated with an additional 0.032 deaths per 1,000 population in the following year. Given an average population of 50,203 persons per district, this equates to an increase of nearly 2 conflict-related deaths per year. Lagged per capita income and the current-year conflict-related deaths are negatively related. This quantitative finding is that a 1 percent increase in average per capita income level would lower conflict-related deaths per 1,000 population by 0.372, or 19 deaths per year.

The fixed-effects and random-effects estimations suggest a strong inverse association between educational attainment and the intensity of conflict (less education means more conflict). If the relationship is symmetric, this possibly suggests that by encouraging the male population to complete secondary education (or higher), a statistically significantly lower number of conflict-related deaths might then be seen in subsequent years. However, depending on where one sets the cutoff point, this link is statistically insignificant for the between-group means model. This somewhat tenuous finding may be due to the rather small variation in male educational status across time. Also, information on specifically

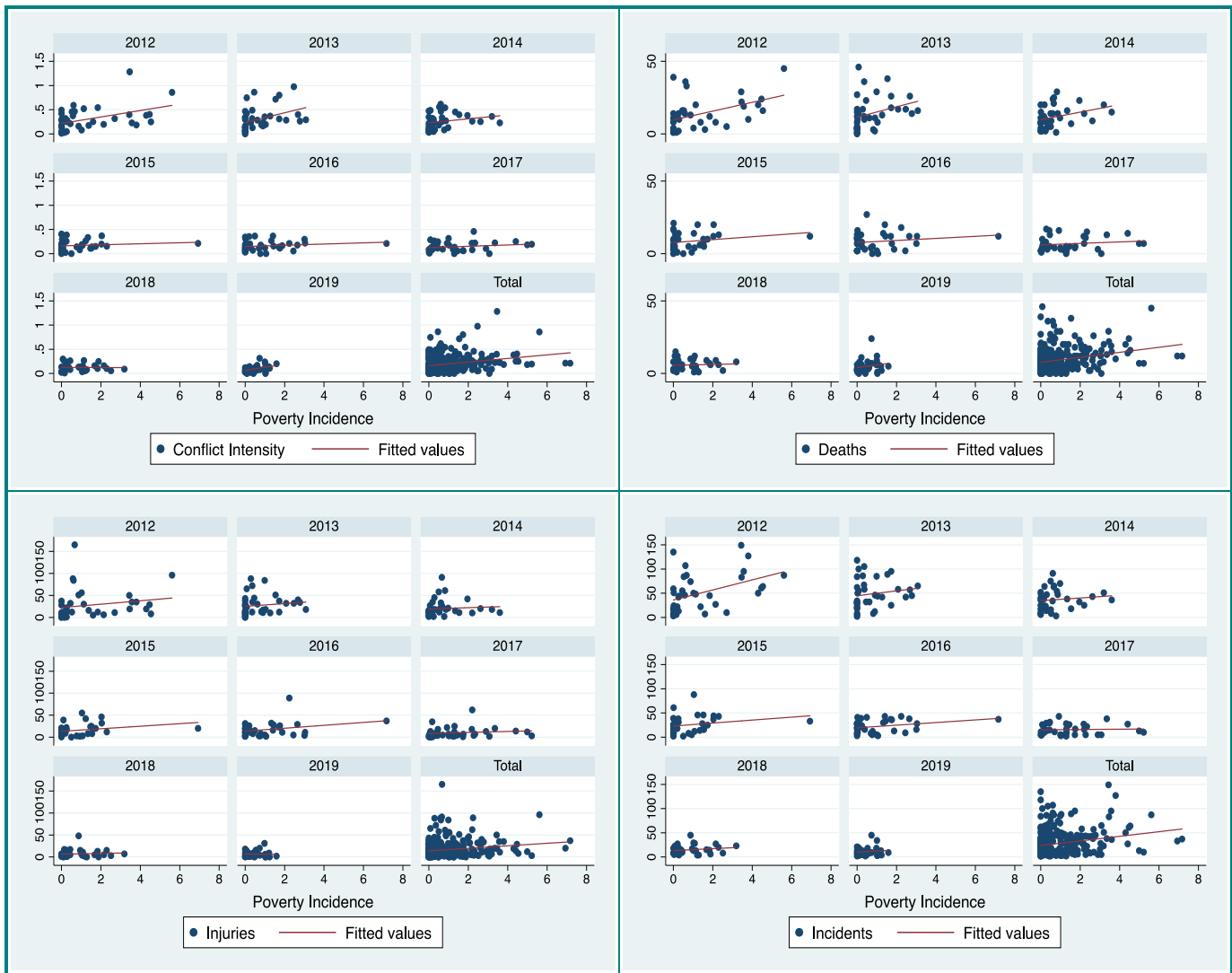


Figure 6: Poverty incidence (in percent) and number of casualties, 2012-2019.
Sources: Deep South Watch (DSW) and Information System for Basic Minimum Needs (BMN).

Islamic-based education, quite different from the dominant Thai-based education model, is not included in the dataset.

Including the ethno-religious polarization index into the models reveals that polarization in the Deep South is (probably) not a statistically significant variable—casting doubt on the oft-heard argument in national media that it is the ethnic background and different religious beliefs of those who live in the Deep South that are among the key factors responsible for the ongoing violence. The finding echoes those made in other country

studies in the literature.

Finally, regarding geography, districts bordering the sea and/or Malaysia likewise does not affect conflict intensity. However, when including the geography variables in the random-effects and between-group means regression models, the role of poverty incidence in determining conflict intensity in the following year becomes statistically prominent, unlike in the fixed-effects regression model where both geographical variables are omitted. This may suggest a biased, or at least inconsistent, poverty coefficient in this model.

Table 2: Results of regression analysis

Independent variable	<i>Conflict intensity</i>		<i>Conflict intensity</i>		<i>Conflict intensity</i>	
	(1)		(2)		(3)	
	<i>Fixed-effects (within regression)</i>		<i>Random-effects (GLS regression)</i>		<i>Between-group means (between regression)</i>	
	<i>Coefficient</i>	<i>Std. Err.</i>	<i>Coefficient</i>	<i>Std. Err.</i>	<i>Coefficient</i>	<i>Std. Err.</i>
Poverty (lag-1)	0.010	(0.011)	0.020**	(0.009)	0.032**	(0.014)
Male schooling (lag-1)	-0.011**	(0.003)	-0.004*	(0.002)	0.005	(0.004)
ln(Income) (lag-1)	-0.148**	(0.075)	-0.176**	(0.072)	-0.372*	(0.207)
Polarization (lag-1)	0.110	(0.172)	0.006	(0.045)	0.010	(0.065)
Sea	<i>Omitted</i>		-0.040	(0.031)	-0.048	(0.032)
Malaysia	<i>Omitted</i>		-0.022	(0.031)	0.007	(0.031)
Constant	1.992**	(0.802)	2.201**	(0.765)	4.115*	(2.203)
Number of obs.	259		259		259	
Number of groups	37		37		37	
Within R-squared	0.1134		0.0894		0.0214	
Between R-squared	0.0007		0.2361		0.3862	
Overall R-squared	0.0345		0.1304		0.1107	
Log Likelihood						
Prob (F statistic)	0.0000		0.0000		0.0163	
Hausman Test	13.55					
Prob > chi2	0.009**					

Notes: * Statistically significant at 10%; **statistically significant at 5%.

Conclusion

Taking its main cues from the extant literature, this article explores factors governing the ongoing violence in Thailand's Deep South, the country's southernmost region. Using data from Deep South Watch and Thailand's Ministry of the Interior's Information System for Basic Minimum Needs, this study (exploratory as it is) is pioneering in that, to the best of the authors' knowledge, it is the first time such work has been carried out for the region—a region in which violence has cost many thousands of lives and continues to mar Thailand's

tourism and direct foreign investment-dependent international image. While the number of violent events has declined over time, this apparent reduction in violence has been achieved by effectively garrisoning large population segments, suppressing (if perhaps not repressing) the local population, and limiting education and investment opportunities. The Deep South is environmentally pristine and contains numerous archeological and contemporary Malay-Muslim cultural treasures. As such, it is a potential "hotbed" for both western-style ecotourism and for *halal* tourism (tourism

facilities in accordance with Muslim traditions and beliefs). However private investment levels are low, and travelers are routinely warned by governments (Thai and non-Thai) not to even enter the region due to security concerns.

Collier, Hoeffler, and Soderbom (2001) points out that there can be substantial differences between variables that *initiate* violence and those that *prolong* it. Ethnicity-related factors and the size of relevant diasporas, along with geographic factors, are among the significant variables that can initiate violent conflict, but they tend to have no bearing on its duration. But the exploratory panel regressions did not find either ethno-religious-linguistic polarization or geography to have (statistically) contributed to the violence. Instead, the results are driven by socioeconomic deprivation. It is not wholly unreasonable to believe that rather than focusing on possibly negotiating and/or reconciling divisive historical and cultural issues between Thai citizens of different heritages, more immediately effective advances might be made by lessening the economic hardship that the people of the Deep South face at the individual, household, and district levels. That said, more data collection and research is advisable to firm up, or challenge, the initial results reported here.

Notes

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1. "Thailand's Deep South" shall be referred to as simply "the Deep South" for the remainder of this article. Patani: Jitpiomsri, Waitoolkiat, and Chambers (2018). Muslims: NSO (2020) and DOPA (2020).
2. Seizure: Jitpiomsri, Waitoolkiat, and Chambers (2018). Incidents: DSW (2020); Jitpiomsri (2016).
3. The latest data available from NESDC (2019) are for 2018. This province-based dataset is different from the

district-level data used here in the empirical analysis. The NESDC's (2019) poverty incidence (Figures 3 and 4) is calculated based on the Household Socioeconomic Survey (SES) (a national survey). Due to the data sampling method SES employs, this dataset can be used to represent national or provincial situation, but not sub-provincial, district data. What is reported here are the official government province-level numbers normally seen in the literature. Poverty incidence at the district-level, on the other hand, is calculated based on the basic minimum needs (BMN) measure which is a sub-provincial dataset collected on every household. Rather than using the national or local poverty line, BMN set the poverty threshold at THB 30,000 which then changed to THB 38,000 in 2017.

4. Indicators: Along with district-specific geographic conditions such being mountainous or forested areas.

5. Commodities: For example, Collier, Hoeffler, and Soderbom (2001); Bruckner and Ciccone (2010); Dube and Vargas (2013).

6. Education: Nicolai and Triplehorn (2003).

7. Fearon and Laitin (2003).

8. Songkhla: The 4 districts are Chana, Nathawi, Thepha, and Sabayoi. They border on or are close to Pattani and Yala. Another district, Sadao, would normally be included as among the Deep South districts as well but due to many missing observations it was dropped from the analysis. BMN: the BMN is not a publicly available dataset.

9. Deaths: These are the min/max numbers of deaths for 2012. In other years, several districts experienced zero deaths for the whole year.

10. Income: In this article per capita income is not calculated as ordinarily understood. Instead, "household-based per capita income" is calculated as the average income of all members in a household or, for short, household per capita income. Poverty rate reduction: Poverty incidence mentioned here is calculated based on the BMN. Figures 3 and 4, which show a slightly different picture, are based on the NESDC's (2019) poverty incidence—see Note 2.

11. Per capita income: BMN.

12. Insurgency: For example, Chongkittavorn (2019); Voice (2018). Borders: Districts with both a sea and a land border are not coded separately coded.

13. Socioeconomic development: As measured by higher poverty incidence, lower average incomes, and by a lower educational status of the male population.

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Income inequality and conflicts: A new Gini decomposition analysis

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Abstract

There has been little research examining how income inequality may or may not contribute to the “grievance” aspect of conflict. For the most part, the measure used is the traditional Gini index, which is suitable to reflect vertical inequality (VI) rather than horizontal inequality (HI). Calculating HI requires the ability to decompose inequality indices, especially the Gini index, into a within-subgroup component and a between-subgroup component. There exists a long-standing stream of literature discussing how to decompose the Gini index. This article discusses the shortcomings of existing Gini decomposition methods and proposes a novel method that divides the Gini index into *within-subgroup* and *across-subgroup* components. This novel method is then applied to the case of Thailand in the years 2009–2017. The differences in the two components derived from the method of this article and those of existing methods are large. In addition, the HI measure this article introduces is also large relative to non-Gini measures such as the Theil and Shorrocks indices. Therefore conflict-related papers that include an existing Gini decomposition and HI measure among their independent variables may wish to test their models with those of this article and other measures—to examine if the results are consistent and to mitigate a risk of misleading policymakers.

Income inequality is a key problem in many, if not all, human dimensions, such as access to education, health care, and political rights. It is caused by many factors, but economic policies are among the most important. Policies that benefit some groups of people, while being a problem to others, include limited access to investment funds, education, and health care services. Many non-economic factors also have an important role in the unequal distribution of income—by being based on race, religion, and culture, the rights and opportunities of some groups of people are limited and inferior to those of the majority or dominant groups. In many areas of the world, inequality persists between people or groups in the same or different societies; sometimes igniting into conflict.

Often placed within the context of the “greed and grievance” debate on the causes of civil war, little research has examined how income inequality may or may not contribute to the “grievance” aspect of conflict. Even if a causal link is found to exist, the transmission mechanism from inequality to conflict is often not

addressed—for example through “upward-envy” by the poor wishing to catch up with the rich, or “downward-envy” by the rich not wishing the poor to catch up. However, whether a transmission mechanism is addressed or not, this article instead critically queries the very *measure* of inequality used in the literature.¹

For the most part, the measure used is the traditional Gini index, sometimes tweaked to reflect horizontal inequality (HI), rather than vertical inequality (VI) for which it is better suited. VI assumes a uniform, undifferentiated population (except for income differences); in contrast, HI additionally introduces subpopulations to recognize segmentation by some criterion such as subnational region, economic distinction, political grouping, or cultural status marker (“Buddhist/Muslim”, “ethnic majority/minority”, and so on). Sometimes such markers overlap e.g., Melayu Muslims in Thailand’s southernmost region. Calculating HI requires the ability to decompose inequality indices, especially the Gini index, into a within-subgroup component and a between-subgroup component. The

former may stimulate conflict between income classes, while the latter can ignite conflicts between culturally-defined subgroups. This topic is much discussed in the literature.

This article discusses the shortcomings of the existing methods of Gini decomposition and proposes a novel method which is then applied to the case of Thailand 2009–2017. The differences in the decomposition methods are substantial, and are also large relative to non-Gini measures such as the Theil entropy index and the Shorrocks index. This suggests that conflict-related papers that include an HI measure among their set of independent variables might wish to test their models with the HI of this article, along with several other different inequality measures, to determine whether consistent results emerge.²

The rest of this article commences with a review of the literature on inequality, conflicts, and their economic causes. There follows a discussion on the existing decomposition methods of the Gini index and proposes a new method. Thailand is then used as an example, commencing with a background of conflict and inequality in the country. Based on the regional decomposition of the Gini index, the gross Gini across-subgroup is calculated and compared with the traditional between-subgroup inequality indices. Following the article's conclusion, the mathematics of the Gini index and its new decomposition can be found in Appendix A.

Inequality, conflicts, and economic causes

There are two types of inequality. Vertical inequality (VI) means inequality between people (individuals or households) that assumes a uniform and undifferentiated population exists (except for income differences). Horizontal inequality (HI) is inequality in the economic, social, political, and cultural status within a culturally-defined group. In other words, HI means equality between groups of people with attributes that are shared by group members such as culture, religion, and ethnicity. Regional inequality can also be considered HI if people in one region share common attributes that distinguish them from those in other regions.

A great deal of literature examines the importance of economic inequality in relation to civil conflicts which

Decomposing the Gini index using a novel *across-subgroup* component, rather than the traditional *between-subgroup*, can uncover a much greater horizontal inequality than would otherwise be revealed. It achieves this by being based on income gaps *across all pairs of members* of different subgroups (rather than the mean income gaps *between* different subgroups). This, therefore, highlights a need for inequality analysis to apply a range of Gini decomposition methods to ensure robustness.

can be divided into two sides. First, a small amount of literature examines how income inequality may or may not contribute to conflict. In the context of the “greed and grievance” debate on the causes of civil war, Collier and Hoeffler (2002) found that most proxies for grievance (including income and asset inequalities) were insignificant in explaining civil wars. Fearon and Laitin (2003) suggested that the prevalence of civil wars in the 1990s was mainly the result of an accumulation of protracted conflicts since the 1950s. They state factors that explain which countries are at risk of civil war are the conditions that favor insurgency, such as poverty, political instability, and a large population—rather than ethnic and religious diversity and measures of grievances such as economic inequality (country-level Gini index) or state discrimination against religious or language minorities. Cramer (2003) suggested that economic inequality is critically important in explaining civil conflicts if it is inseparable from other dimensions of inequality. His findings are in line with those of Stewart (1998 and 2000) which also pointed out that HI is the root cause of civil conflict while VI is not. Groups exploit racial and religious differences in explaining social, economic, and political inequality in order to ignite hatred, hostility, conflict and civil war (Stewart, 2000). Cederman, Gleditsch, and Buhaug (2013) found that HI based on subgroups' relative mean income is more likely to inspire conflict, especially for politically excluded groups. Moreover, groups that are poorer than average experience more wars than those closer to the country average. In a recent study, Huber and Mayoral (2013) decomposed the Gini index into three components, a *within-group* component, a *between-group* component and a residual term, and measured HI

by the ratio between each subgroup's mean income and the country's mean income. The study found a strong positive association between within-group inequality and conflict which implies that the poor provide cheap labor and the rich provide necessary economic resources. But they did not find any significant association between HI indices and group participation in conflict. In sum, most literature employed country or subgroup level data on VI, measures of polarization, and subgroups' relative mean income, but ignored individual income gaps across subgroups in their analyses. Hence an appropriate measurement of HI is highly important for inequality-conflict analysis.³

A second differing viewpoint, about which there is little literature, stems from an investigation of a reciprocal relationship between inequality and conflict. Bircan, Bruck and Vothknecht (2010) employed an econometric model and the data of countries in six regions from 1960 to 2005 to study wars that were related to changes in inequality. They found that inequality increased both during war time and during the first five years of the post war reconstruction period. The increase in inequality during the first period was caused by the collapse of the market system and government action/inaction (especially in the enforcement of laws and regulations). However, inequality began to decrease after the war and went back to the pre-war inequality level within a decade.⁴

Sambanis (2005) stated that the construction of the Gini index as a VI measure is the reason why inequality was found to be insignificant in the quantitative analysis of the economic effects of war. In other words, the Gini index is not suitable for horizontal inequality analysis. Cramer (2003) added that poor quality of distribution data used in inter-country analysis was another reason why inequality was insignificant in explaining conflict.⁵

Some recent studies attempted to explain the relations between inequality and conflict via "envy or jealousy". People feel envy when they observe another person has something they want, but lack. They feel the need to have what the other person has. Even worse, they may even want another person *not* to have what he/she has in order to maintain "social superiority". Envy can be upward,

e.g., the poor are envious of the rich, or downward, e.g., the rich are downwardly envious of the poor. Envy can be positive, i.e., aspire people to improve. Negative envy may lead to conflict, with or without violence.

Examples of the literature in this category are Neumark and Postlewaite (1998), Vai-Lam Mui (1995), Zizzo and Oswald (2001), and Wodtke (2016). Neumark and Postlewaite employed the relative income concept and found that a married woman in the U.S. was 16–25% more likely to work outside the home if her sister's husband earned more than her own husband. In this case, envy was upward, did not cause any conflict, and had a positive economic effect. This behavior is similar to "the Demonstration Effect" where household decisions to consume do not depend on their own income, but on their income in relation to those of others. Their consumption decisions depend not only on their own taste, but also on the frequency of their contact with superior goods consumed by people they know.⁶

Envy may cause conflicts that are followed by retaliation, with or without violence. Vai-Lam Mui employed an economic model to analyze a problem faced by a member of a society who improved his or her socioeconomic status, but was envied by others, including neighbors, whose status and quality of life did not improve to the same extent. Retaliation came in many forms—from theft to property destruction, and to the use of violence. Even though envy cannot be eliminated, the report also identified the importance of sharing his or her fortune with other members of the society, and punishing those who envy and put pressure upon others who have succeeded in improving their socioeconomic status. Zizzo and Oswald conducted an experimental study which revealed that two-thirds of the experimental subjects exploited their wealth and position to eliminate part or whole of other people's wealth, but the intensity of the envy did not decrease much even though the cost of using violence increased. Wodtke, based on a theory of social class, reviewed mechanisms that link property ownership and authority to personal income and concluded that distributional mechanisms are shaped mainly by three interrelated factors. The first two factors are market competition and technological change that

benefit larger and better endowed firms at the expense of inferior firms. The third factor is political mobilization by which dominant groups exploited their political advantage to suppress inferior groups. In the 1970s and '80s, large proprietors and high-level managers in the U.S. organized political activities that aimed to depress worker compensation and shifted income toward higher social classes. The distribution of personal income in the U.S. became more unequal after the 1980s. The findings of the three studies revealed that inequality can create “negative envy” between individuals or groups which subsequently fuels conflict and retaliation, no matter how costly the use of retaliation is.

The awareness of socio-economic inequality in society and consequent envy can trigger conflict. Haile, Sadrieh and Verbon (2008) experimented with the effect of heterogeneity in income and race on cooperation in South Africa where there are conflicts between whites and non-whites. They found a strong and significant cross-racial and upward envy effect caused by socio-economic information on the income level and the race of their partners. When this information was not provided, no significant behavioral differences of both groups were observed. When the information was available, the low-income experimental subjects from both groups invested significantly less in partnerships with the high-income subjects of the other group than in any other partnership. In the real world, the awareness of socio-economic differences that may inspire envy and conflict is increased by heightened connectivity between people and better access to socio-economic information.

There can be envy not only between individuals, but also between groups. Tocqueville (1969) in his book “Democracy in America” pointed out that “the Southern States are permeated by envy and mistrust toward the North”. Elster (1991), also quoted the leader of West Germany, Helmut Kohl, stated that “other nations fear of a united Germany may really be economic jealousy”.⁷

Gini index and decomposition methods

Existing Gini decomposition methods

The Gini index, hereafter GINI, was first used by Gini

(1912) and has been used widely in the analysis of income inequality since then. Conceptually, it measures the gap between the actual distribution of income and the idealistic distribution of income by which everybody has equal income. Mathematically, it is the average relative income gap of all pairs of members.⁸

Generally, total inequality can be decomposed by subgroups into within-subgroup and between-subgroup inequality components. If subgroups are defined by attributes such as culture, religion and ethnicity, the between-subgroup component can reflect HI. The literature calculates the between-subgroup component from the relative mean income of the subgroup, which is observable by statistical and planning authorities and recognized by governing authorities. Individual income gaps are ignored.

Many past studies attempted to decompose the Gini index (G) by subgroup. Bhattacharya and Mahalanobis (1967) divided Gini (G) into two parts: Inequality between subgroups (G^B), and inequality within subgroups (G^W). Where μ is the mean income of total population, and μ_g and V_g are the mean income and population share of subgroup g , respectively. G^B is calculated from the gaps between the mean income of all pairs of subgroups weighted by their respective shares in the total population, i.e.,⁹

$$(1) \quad G^B = \frac{1}{2\mu} \sum_{g=1}^G \sum_{k=1}^G V_g V_k |\mu_g - \mu_k| \text{ for all } k \neq g$$

G^W is assumed to equal residual or $G - G^B$. However, as Dagum said, the decomposition has no appropriate interpretation for G^W .

Another decomposition method, hereafter referred to as Mehran’s method, was suggested by Mehran (1975), Mookherjee and Shorrocks (1982), and Lambert and Aronson (1993). The method decomposed the Gini index into three components. The within-subgroup component (G^W) is calculated from the sum of inequality within each subgroup (G_g) weighted by the product of its income share (S_g) and population share¹⁰

$$(2) \quad G^W = \sum_{g=1}^G V_g S_g G_g$$

The remaining part ($G - G^W$) equals the between-subgroup component (G^B) plus an interaction term or R . G^B is calculated by assuming that the income of all members equals the mean income of subgroups to which they belong, which is exactly the same as that of Bhattacharya and Mahalanobis. Radaelli (2010), pointed out that it is impossible to interpret R with any precision.

With no residual, Dagum (1997) divided the Gini index into two components, i.e., the within-subgroup component (G^W) and the between-subgroup component (G^{GB}). G^W has the same definition as that of Mehran's method. G^{GB} can be rewritten as a half of the sum of between-subgroup Gini weighted by the average of the product of their population and income shares or

$$(3) \quad \frac{1}{2} \sum_{g=1}^G \sum_{k=1}^G G_{gk} |V_g S_k + V_k S_g|$$

$$\text{where } G_{gk} = \frac{1}{N_g N_k (\mu_g + \mu_k)} \sum_{i=1}^{N_g} \sum_{j=1}^{N_k} |Y_{gi} - Y_{kj}|, \text{ for all } k \neq g,$$

where N is the total number of population and N_g is the number of population in subgroup g . Moreover, Dagum separated G^{GB} into the extended Gini between subgroups (G^{NB}) and the income intensity of transvariation between subgroups (G^T). Both G^{NB} and G^T depend D_{gk} , the relative income affluence between subgroups g and k , that has values in the closed interval $[0,1]$. D_{gk} equals 0 if all subgroups have the same mean income, and equals 1 if they are different and the distribution of income within all subgroups is non-overlapping. However, the estimation of D_{gk} is quite complicated.

A new decomposition method

This article decomposes GINI into two components, i.e., an inequality *within*-subgroup, and an inequality *between* (or more precisely *among*) the members of different subgroups. Hereafter, the second component will be called the *inequality across-subgroup component*. The across-subgroup component can be used to estimate the

gross Gini across-subgroup (GAS) which is the average relative income gap of all pairs of members of different subgroups (see Appendix A for detail). Much of the literature suggests that “interpersonal inequalities” are at the core of stimulating political grievances and higher risk of conflicts. From this perspective GAS better reflects HI than the traditional inequality between subgroups.¹¹

To demonstrate why the across-subgroup component is a more accurate measure than the traditional between-subgroup component, let us assume that there is a country in which there are two subgroups, the majority and the minority for whom mean income is equal. The distribution of income of the majority has zero variance while the minority has non-zero variance. In this case, the existing decomposition methods will show that the total inequality is 100% contributed by the within-subgroup component, i.e., there is no contribution from the between-subgroup component. With this article's method, the total inequality consists of both non-zero within-subgroup and across-subgroup components.

GAS, as another measure of HI, has a factual socioeconomic interpretation and policy implications that are different from those of the traditional between-subgroup inequality. First, with better transport and communication, distance and time are no longer barriers to people's connectivity. People are well-connected and aware of the socioeconomic differences between them. Inequalities between individuals create a sense of being in different socioeconomic classes, that can mobilize people to join/start a conflict. Second, between-subgroup inequality based on the mean income of subgroups is observable and reported by statistical and planning authorities—as such, it has been used as a basis when designing policies to reduce income gaps between subgroups, especially regions. But across-subgroup inequality is not observed and recognized by the governing authorities although it is more meaningful in explaining how inequality causes conflicts among the members of different subgroups.

Three points about this article's method should be noted. First, this article estimates the across-subgroup component from the income gaps of all members of

different subgroups and thus captures both the mean and variation of within-subgroup distribution of income. By contrast, Bhattacharya and Mahalanobis' method and Mehran's method estimate the between-subgroup component from the mean income of subgroups. Second, despite a different mathematical

decomposition, this article and Dagum's methods equally divide total inequality into two proportions with no residual term. However, inequality across any pair of subgroups is defined differently. Dagum measured Gini between subgroups g and k (G_{gk}) from the income gaps of their members in relation to the simple average of the subgroups' mean income. This article measures G_{gk} from the individual income gaps in relation to the mean income of the total population. Third, Dagum called the between-subgroup component the gross contribution of Gini "between subgroups" (G^{GB}) while this article calls the contribution of Gini "across-subgroups" (G^A). Based on G^A and the cohesion coefficient, which equals 1 less the sum square of the population shares of all subgroups, this article measures the gross Gini across subgroups (GAS), an alternative measure of HI, from the relative income gaps of all pairs of individuals in different subgroups.

The comparison of different decomposition methods is highly informative (Table 1). The sample consisted of 66,322 U.S. families. Married-couple families had the highest mean income, income share, and population share but the lowest within-group income inequality. Female householder families had the smallest mean income but the highest within-group income inequality. Male householder families had

Table 1: U.S. family income by type of families in 1990

Type of family (g)	Mean income (μ_g)	Income share (S_g)	Population share (V_g)	Gini index	
				G_g	G_{gk}
Total	42,652	1.000	1.000	0.395	-
1. Female householder, no husband	22,140	0.088	0.170	0.444	$G_{12} = 0.458$
2. Male householder, no wife	34,685	0.036	0.043	0.387	$G_{23} = 0.391$
3. Married-couple families	47,528	0.876	0.787	0.364	$G_{31} = 0.489$

Source: Dagum (1997).

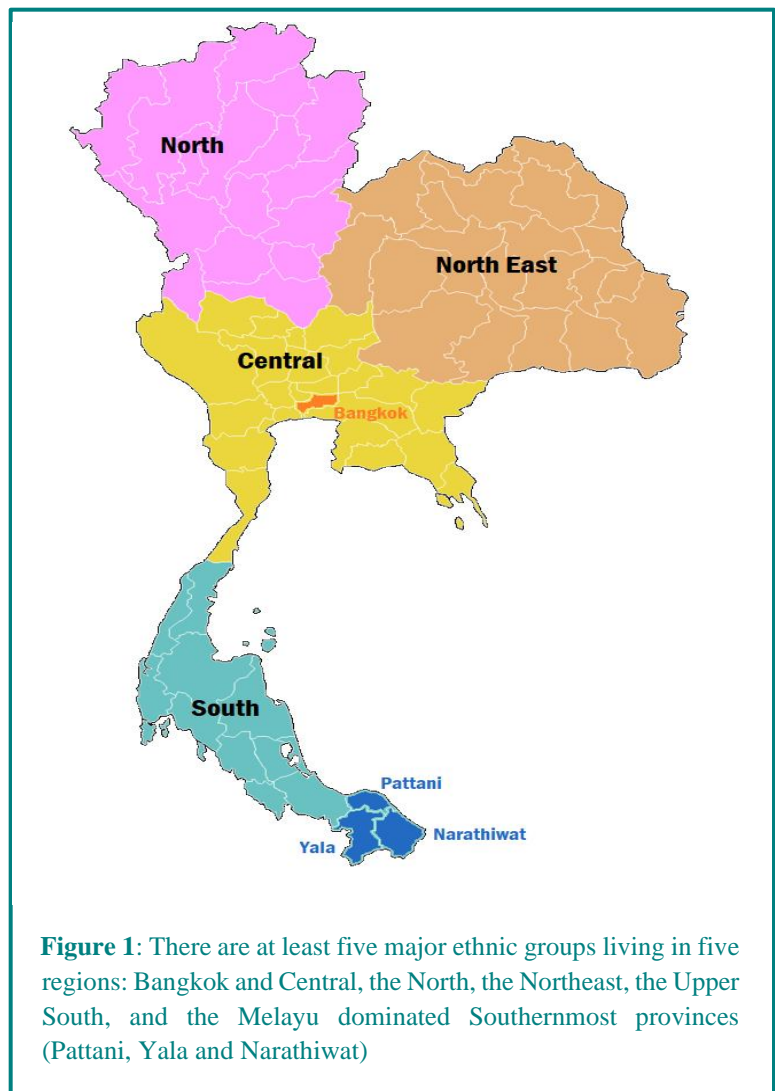


Table 2: Comparison of the four decomposition methods

Decomposition methods	Total Gini	Contribution of G^W	Contribution of G^B , G^{GB} or G^A	R	G_{gk}		
					G_{12}	G_{23}	G_{31}
B&M's	0.395	0.356 (90.13%)	0.039 (9.87%)	-	-	-	-
Mehran's	0.395	0.258 (65.32%)	0.039 (9.87%)	0.098 (24.81%)	-	-	-
Dagum's	0.395	0.258 (65.32%)	0.137 (34.68%)	-	0.458	0.391	0.489
This article's	0.395	0.258 (65.32%)	0.137 (34.68%)	-	0.305	0.377	0.359

Notes: B&M's means Bhattacharya and Mahalanobis's method. Based on Equation 4, this article's G_{gk} are calculated from Dagum's G_{gk} . Cohesion coefficient equals 0.35, and $GAS = \frac{0.137}{0.35} = 0.392$.

the lowest income and population shares and a within-group inequality closer to that of married families.¹²

The total inequality of U.S. family income is divided into two components, within-subgroup and between/across-subgroup components, by the methods proposed by Bhattacharya and Mahalanobis, Mehran, Dagum, and this article (Table 2). The comparison can be summarized as follows. For the within-subgroup component (G^W), The Bhattacharya and Mahalanobis estimate of 0.356 is, by definition, greater than that of other methods (0.258). Dagum's and this article's estimates of the between/across-subgroup component (G^{GB} and $G^A = 0.137$) are greater than Bhattacharya and Mahalanobis's and Mehran's estimates ($G^B = 0.039$). This difference indicates that using the traditional between-subgroup component underestimates the crucial role of income difference between/across subgroups in any income distributional analysis. Nevertheless, Dagum and this article's methods have both similarities and dissimilarities. Both provide the same contribution of within-subgroup inequality to total inequality ($G^W = 65.32\%$), as well as that of between/across-subgroup inequality (G^{GB} and $G^A = 34.68\%$). But Gini between/across each pair of subgroups (G^{gk}) were different. However, the gross Gini across subgroups or

GAS that, estimated by this new method, equals 0.392, indicates that it is as important as VI in the analysis of 1990 U.S. family income.

Inequality decomposition and unrest in Thailand

Thailand has more than 70 ethnic groups, with at least five major ethnic groups living in five regions: Bangkok and the Central region, the North, the Northeast, the Upper South, and the Melayu dominated Southernmost provinces (Pattani, Yala and Narathiwat)—see Figure 1. While there is no institutional or legal structure that overtly creates or promotes HI, there is evidence that HI exists—as such, Thailand presents as a good example to demonstrate this article's decomposition method.

Past studies on the decomposition of inequality in Thailand

Few past studies decomposed income inequality in Thailand. Such studies were conducted by Hutaseranee and Jitsuchon (1988), and Ikemoto (1991). Hutaseranee and Jitsuchon, based on the Shorrocks index, pointed out that the contribution of inequality within subgroups to total inequality was significantly more than that of the inequality between subgroups (see Table 3). The contribution of inequality between subgroups to total

inequality depended on how subgroups were defined. The between-subgroup contribution was around 26–34% when the subgroup was defined by socioeconomic class; 23–32% by occupation of the household head; at around 15–25% by geographical factors; 20–28% by the type of community; and less than 1% when defined by the gender and age of the household head. Despite being small, the contribution of inequality between subgroups tended to increase over the study period from 1975 to 1986.

Ikemoto used Theil, Gini, and variance of logarithm to measure income inequality in Thailand in 1969, 1975, 1981 and 1986, and used Theil and variance of logarithm to decompose the inequality. The study had similar findings and are described in Table 4. Inequality between the urban and the rural areas contributed only 10–15% (based on variance of logarithm) and 16–22% (based on Theil) of total inequality—but the urban-rural income gap, which decreased in the earlier years, tended to increase after 1975.

In sum, based on regional mean income, the two studies revealed that development in Thailand has become increasingly more imbalanced over the period. However, the contribution of inequality between subgroups, including regions and areas, was very small and much less than the contribution of inequality within subgroups. Over the period, there were two major periods of violent unrest (in 1973 and 1976) centered in Bangkok and led by the anti-military-dictator movement. Another period of unrest in 1992 followed the same lines, but in the following two decades, the

causes of conflict and unrest reflected elements of inequality.¹³

Table 3: Income inequality and decomposition by subgroup in 1975/76, 1980/81 and 1985/86

<i>Index and decomposition (%)</i>	<i>1975/76</i>	<i>1980/81</i>	<i>1985/86</i>
Shorrocks 2	0.30	0.35	0.43
Region (%)			
Between	16.18	19.87	24.90
Within	83.82	80.13	75.10
Location (%)			
Between	15.01	18.86	24.98
Within	84.99	81.14	75.02
Community (%)			
Between	20.20	21.77	28.15
Within	79.80	78.23	71.85
Gender of household head (%)			
Between	0.28	0.52	0.76
Within	99.72	99.48	99.25
Age of household head (%)			
Between	0.47	0.62	0.27
Within	99.53	99.38	99.73
Education of household head (%)			
Between	-	15.14	20.00
Within	-	84.86	80.00
Socioeconomic class (%)			
Between	25.57	26.97	33.82
Within	74.43	73.03	66.18
Occupation of household head (%)			
Between	22.62	24.02	31.31
Within	77.38	75.97	68.68
Sector of production (%)			
Between	21.19	23.94	28.53
Within	78.81	76.06	71.47

Source: Hutaseranee and Jitsuchon (1988).

Conflict and unrest in the 2000 and 2010 decades

Although there have been many examples of major political unrest in Thailand during the past two decades, this article will not discuss the unrest in 2005–2006 and 2008, against the governments of Prime Minister Thaksin Shinawatra and his political heirs (Samak Sundaravej and Somchai Wongsawat), as these were mainly driven by political causes. The unrest led to a *coup d’etat* by General Sonthi Booyaratkin and an interim government under General Surayud Chulanont, not to mention the unrest in the southernmost provinces that was inspired by many factors and has continued with violence since early 2004.

Two more examples of major political unrest that took place between 2009 and 2017 were driven by the desire of authority groups to gain “political and social superiority”. These were the unrest in 2009 during the term of Prime Minister Abhisit Vejjajiva and the other was 2013–2014 during the term of Prime Minister Yingluck Shinawatra. While both periods of unrest were, at the onset, ignited by political causes, the second unrest was triggered by opposing views on an amnesty law that aimed to benefit Thaksin Shinawatra. Ordinary people from different regions joined the unrest according to their own agendas, including anti-corruption, justice, better and more transparent policies, fairer access to natural resources, better opportunities and rights for ethnic minorities etc.

The two periods of unrest also had a regional dimension. The first period of unrest against the newly set-up government was dominated by rural people from the North and the Northeast, the two poorest regions. The second period of unrest against the government was inspired and mobilized by the upper and middle-income classes, especially from Bangkok, Central Thailand, and the South. At the same time, there was a pro-government movement in many areas of the North and the Northeast. Following the second period of unrest was another *coup d’etat* in May 2014 by General Prayut Chan-o-cha, who has been in power since then. There were many policy changes over this turbulent period—examples of those that targeted different groups of people are paddy price

Table 4: Income inequality and decomposition by urban/rural subgroups in 1969, 1975, 1981 and 1986

<i>Inequality and Decomposition</i>	1969	1975	1981	1986
Gini Index	0.43	0.43	0.45	0.49
Theil	0.37	0.32	0.35	0.42
Within areas (%)	78.1	83.9	84.7	83.4
Between areas (%)	21.9	16.1	15.3	16.6
Variance of logarithm	0.66	0.69	0.75	0.88
Within areas (%)	87.2	89.7	89.9	83.7
Between areas (%)	12.8	10.3	10.1	16.3

Source: Ikemoto (1991).

policies, rubber price policies, and populist policies such as a tax cut for diesel that benefitted farmers and lower income classes. Most paddy farmers are in the Central region, the North, and the Northeast. The majority of rubber farmers are in the South. Populist policies are viewed as political vote buying that target low income classes. They were financed largely by taxes on the upper and middle-income classes, of which the majority are in Bangkok Metropolis and other urban areas. These regionally biased economic policies may have inspired envy that led to conflict and unrest.

Gini decomposition analysis of income inequality in Thailand

The key point of this section is to show how inequality decomposition was (mis)measured in the past studies, but not to address or to measure the causes and effects of the past unrests. The decomposition of inequality is important in the design of policy measures, their expected effects, and the evaluation of welfare effects across regions.

Total inequality and regional inequality between 2009 and 2017

This subsection presents the background of total inequality and within-region inequality in 2009, 2011,

2013, 2015 and 2017 (Table 5). These are VI which indicate how equal or unequal the distribution of income was between people in Thailand, and between people in each region.

Based on the Gini index, income inequality in Thailand moved in different directions between 2009–2015, and between 2015–2017. It continuously decreased from 0.49 in 2009 to 0.48, 0.46 and 0.44 in 2011, 2013 and 2015, respectively, and went up slightly to around 0.45 in 2017. At the regional level, changes in inequality within all regions tended to be minor and insignificant. Except for Bangkok, where inequality increased between 2009 and 2011, and the South where inequality changed slightly between 2013 and 2015 and between 2015 and 2017, changes in the distribution of income within other regions tended to follow the national trend.

Inequality across regions

The Gini index was decomposed to investigate the contribution of within-region inequality and the contribution of across-region inequality to total inequality in Thailand. The decomposition yielded two important findings (Table 6). Firstly, both the contribution of within-region inequality and the contribution of across-region inequality followed the trend of total inequality, which continuously decreased between 2009, and 2015. However, they remained fairly constant between 2015 and 2017. Secondly, the contribution of across-region inequality to total inequality (78-79% of the total inequality) was much more important than that of within-region inequality (21–22%) in every period. This is in total contrast with the results of past studies which found that the contribution of within-region inequality was around 80% while that of between-region inequality was 20%. Thus, the results of past studies may have sent out misleading signals to policy makers, and need to be retested.

Table 5: Total Gini and within-region Gini in 2009, 2011, 2013, 2015 and 2017

<i>Region</i>	<i>Gini</i>				
	<i>2009</i>	<i>2011</i>	<i>2013</i>	<i>2015</i>	<i>2017</i>
Total	0.49	0.48	0.46	0.44	0.45
Bangkok metropolis	0.47	0.51	0.45	0.40	0.40
Central	0.41	0.40	0.40	0.40	0.40
North	0.45	0.44	0.43	0.39	0.42
Northeast	0.49	0.46	0.44	0.43	0.45
South	0.48	0.46	0.44	0.45	0.44

Source: Poverty and Income Inequality Analysis in Thailand (NESDC, 2017).

Table 6: Gini decomposition within and across regions in 2009, 2011, 2013, 2015 and 2017

<i>Inequality</i>	<i>Decomposition (% Share)</i>				
	<i>2009</i>	<i>2011</i>	<i>2013</i>	<i>2015</i>	<i>2017</i>
Total Gini	0.49	0.48	0.46	0.44	0.45
Contribution of within-region inequality (G^W)	0.11 (22.06)	0.11 (22.44)	0.10 (22.21)	0.09 (21.18)	0.10 (21.76)
Contribution of across-region inequality (G^A)	0.38 (77.94)	0.37 (77.56)	0.36 (77.79)	0.35 (78.82)	0.35 (78.24)

Gross Gini across-subgroups (GAS) and between-region inequality

This subsection compares GAS (based on individual income gaps) with three between-region inequality indices that are based on regional mean income gaps: Theil, Shorrocks, and HI or G^B . The magnitude of GAS distribution of income within each region. Therefore, it is either greater than or equal to the between-region inequality indices. The larger the difference between GAS and between-region inequality indices reflects the greater role of individual income gaps in any inequality-conflict analysis.¹⁴ depends on both the mean income and

the variance of the

The comparison shows that GAS was much greater than the total Gini index and the three between-region inequality indices throughout the 2009–2017 period. Three important findings are noted. First, HI as measured by GAS was more important than VI, at least in the analysis of income distribution in Thailand in this period. If inequality had caused conflicts between people living in different regions of the country, HI or GAS was more likely than VI to be the cause. This is in line with Stewart (1998 and 2000), which suggested that VI was not the root cause of civil conflict, but HI could be. Thus, conflict-related papers that want to include an HI measure among their set of independent variables may consider GAS as an alternative. Second, income differences between regions of Thailand were much more severe at the individual level than at the average regional level—GAS could, therefore, be a useful target for development policies.¹⁵

The third finding is that the between-region inequality and the gross Gini across-region differ not only by magnitude, but also by the direction of changes (Figure 2). While the between-region inequality index increased and was very high in 2015 and 2017, GAS still followed the decreasing trend of total inequality.

In sum, the regional mean income gaps show that development in Thailand has increasingly become more imbalanced over the period, but individual income gaps have not. Moreover, GAS and other HI measures tended to be slightly negatively correlated, i.e., a smaller regional mean income gap may increase individual income gaps across regions.

A puzzle between 2015 and 2017

However, there is a puzzle. After the coup d'état that

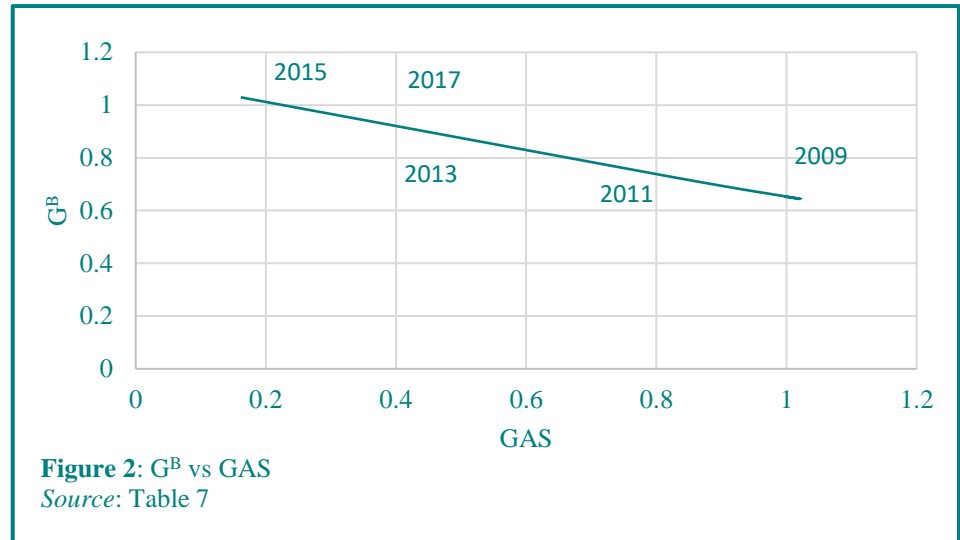


Table 7: Income inequality between/across regions in 2009, 2011, 2013, 2015, and 2017

Inequality Index	2009	2011	2013	2015	2017
Total Gini	0.49	0.48	0.46	0.44	0.45
GAS	0.50	0.49	0.47	0.46	0.47
Theil	0.03	0.02	0.02	0.06	0.06
Shorrocks 2	0.09	0.08	0.07	0.18	0.16
HI and G^B	0.19	0.18	0.17	0.26	0.26

Note: By rounding off to two decimal points, the cohesion coefficient equals 0.76 for all five years, and $GAS = G^A/0.76$.

subsequently followed the second period of unrest, GAS increased slightly between 2015 and 2017 and the relative mean income of Bangkok Metropolis and the central region rose sharply at the expense of the other three regions (Table 8).

But the Gini index for Bangkok and the Central region remained constant (Table 5). Based on the well-known intersecting Lorenz curve debate, it cannot be concluded that the income increase benefitted any specific income class in the two areas. Nevertheless, an area-specific GAS can be calculated and identify whether inequality

across income classes increased or decreased if data on the Gini index of each income class of Bangkok and the Central region are available.

Conclusion

Little research has examined how income inequality may or may not contribute to the “grievance” aspect of conflict. For the most part, the measure used is the traditional Gini index, which is constructed to measure *vertical* inequality (VI) rather than *horizontal* inequality (HI). Calculating HI requires the ability to decompose the Gini index into a within-subgroup component and a between-subgroup component.

This article attempts to decompose the Gini index into these two components. The second component differs from the traditional between-subgroup component because it is based on income gaps *across all pairs of members* of different subgroups (rather than the mean income gaps *between* different subgroups). The gross Gini across subgroups (GAS), another measure of HI, can be estimated from the second component.

With better transport and communication, people are well-connected and aware of the socioeconomic differences between them. Inequalities between individuals create a sense of being in different socioeconomic classes. Such a situation can induce envy, and as a result, conflicts between individuals and subgroups may follow. Thailand’s income data demonstrates this important issue.

Decomposing the Gini index reveals the extent to which within-region and across-region inequality contributes to total inequality. In Thailand’s case, this yielded two important findings. First, both the contributions of within-region and across-region inequalities followed the trend of total inequality, which continuously decreased between 2009 and 2015, but remained fairly constant between 2015 and 2017. Second, the contribution of across-region Gini, which was 78–79% of the total inequality in every period, and that of the within-region Gini, which was 21–22%, was in contrast with the results of past studies. Thus, the past studies may have sent misleading signals to policymakers, and the policies that aimed to reduce the regional income gaps may have to be retested.

Table 8: Relative mean income, whole kingdom and by region in 2009, 2011, 2013, 2015 and 2017

Area	Relative mean income				
	2009	2011	2013	2015	2017
Whole Kingdom	1	1	1	1	1
Bangkok metropolis	2.33	2.34	2.16	2.67	2.53
Central	1.04	0.93	1.05	1.24	1.29
North	0.80	0.80	0.82	0.68	0.70
Northeast	0.70	0.75	0.73	0.61	0.59
South	1.05	1.14	1.06	0.88	0.90

Note: Calculated from per capita household income.

Source: Household Socioeconomic Surveys (National Statistical Office, 2017)

Looking at HI, the comparison shows that, throughout the period 2009–2017, GAS was much greater than the total Gini index and the three between-region inequality indices of Theil, Shorrocks, and HI or G^B . This yields three important findings; first, HI as measured by GAS is more important than VI (at least for Thailand). If inequality had caused conflicts between people living in different regions of the country, HI or GAS may be more likely to be the cause than VI. Second, income differences between the regions of Thailand were much more severe at the individual level than at the average regional level. Thus, GAS should be considered as another independent variable in any conflict-related study. Third, GAS and the between-region inequality differ not only by magnitude, but also by the direction of change. While the between-region inequality indices showed an increase in this period (it was very high in 2015 and 2017), GAS followed the decreasing trend of total inequality. Thus, regional mean income gaps indicate that development in Thailand has increasingly become more imbalanced over the period, but individual income gaps have not.

The findings from the data of Thailand suggest that conflict-related papers that include an inequality

measure among their independent variables might wish to test their models with several different inequality measures, especially GAS, to determine whether the results are consistent. This may usefully be extended to the decomposition analysis by subgroups that are defined by other criteria such as religion, language, and ethnicity.

Notes

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1. Greed and grievance: Collier and Hoeffler (2002). Downward-envy: This article defines “downward-envy” as the emotion or feeling felt by the privileged which drives them to suppress the ability of the underprivileged to join their ranks.
2. Indices: Theil (1967) cited in Sen (1973); Shorrocks (1984).
3. Stewart(1988): Cited in Cramer (2003).
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10. Mehran : Cited in Radaelli (2010). Methods: Mehran (1975), Mookherjee and Shorrocks (1982), and Lambert and Aronson (1993) are grouped in the narrative as “Mehran’s method” but are counted as three of the five existing methods of Gini decomposition.
11. Interpersonal inequalities: Cederman, Gleditsch, and Buhaug (2013).
12. Table 1: For the sake of simplicity, Table 1 borrows data from Dagum (1997).
13. The oil price shock in 1973 could have a role, but was not a major factor.
14. HI: Mancini, Stewart, and Brown (2008). G^B: Mehran’s method.
15. Stewart(1998): Cited in Cramer (2003).

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Appendix A: Mathematics of a new Gini decomposition by subgroup

The Gini index, hereafter GINI, is based on the gap between the Lorenz Curve, that explains the actual distribution of income, and the Egalitarian Line, that shows a situation in which income is equally distributed. By definition, when a graph is drawn in the 0–1 scale, the index equals 2 times the area between the Lorenz Curve and the Egalitarian Line (A).

$$(A1) \quad \text{GINI} = 2A$$

There are many other ways by which GINI can be calculated. When $\mathbf{Y} = (Y_1, Y_2, Y_3, \dots, Y_N)$ is a set of ordered income distribution of N members of which mean income is μ , and the sorting of income is in ascending order ($Y_1 \leq Y_2 \leq Y_3 \leq \dots \leq Y_N$). By Equation (A2), the value of GINI equals the average income gap of all pairs of income in relation to mean income i.e., relative mean difference or relative mean income gap (Sen, 1973). This equation is the most suitable for a decomposition of GINI by subgroup. It is independent of the order of each member in the distribution of income, but depends on the income gaps of all pairs of members.

$$(A2) \quad \text{GINI} = \frac{1}{2\mu N^2} \sum_{i=1}^N \sum_{j=1}^N |Y_i - Y_j|$$

GINI possesses some strengths and weaknesses that are well-discussed in the literature. Most importantly, it is said to have no additive decomposability property and is inferior to other indices that can be decomposed by subgroup and by income sources. It is said to be subgroup decomposable only under a condition called non-overlapping partition, i.e., the income of all members of any subgroup is either higher or lower than that of the members of other subgroups. In addition, it cannot be decomposed by sources of income unless the order of income from each source is the same as the order of the total income. However, in the literature there are several approaches that decompose the index. Their pros and cons are discussed in the article.

Generally, subgroup-decomposition has two components, i.e., within-subgroup inequality and between-subgroup inequality that depends on the mean income of subgroups. This paper proposes a decomposition that contains an across-subgroup inequality component. It does not depend on the mean income of subgroups, but on individual income gaps. It is by the application of this concept that the measure of inequality reflects the degree of envy between individuals.

The overall distribution of income, $\mathbf{Y} = (Y_1, Y_2, Y_3, \dots, Y_N)$, can be divided into G subsets or subgroups that are mutually exclusive. Any subset g has N_g members, where $N = \sum_{g=1}^G N_g$. The distribution of income within any subset g can be written as $\mathbf{Y}_g = (Y_{g1}, Y_{g2}, Y_{g3}, \dots, Y_{gN_g})$, where mean income equals μ_g and inequality equals G_g . Every \mathbf{Y}_g does not have to be in ascending or descending order, or a non-overlapping partition. The income gap between any two members of a pair of subgroups = $|Y_{gi} - Y_{kj}|$, where Y_{gi} is the i^{th} member of subgroup g and Y_{kj} the j^{th} member of subgroup k .

Based on this arrangement, GINI can be easily decomposed into two terms. The first term is the contribution of within-subgroup inequality weighted by the income share and population share of each subgroup. The second term is the total relative income gaps across subgroups g and k , $\forall g \neq k$ (Equation A3).

$$(A3) \quad \text{GINI} = \frac{1}{2\mu N^2} \sum_{i=1}^N \sum_{j=1}^N |Y_i - Y_j|$$

$$\begin{aligned}
 &= \frac{1}{2\mu N^2} \sum_{g=1}^G \left\{ \sum_{i=1}^{N_g} \sum_{j=1}^{N_g} |Y_{gi} - Y_{gj}| + \sum_{i=1}^{N_g} \sum_{k=1}^G \sum_{j=1}^{N_k} |Y_{gi} - Y_{kj}| \right\} \\
 &= \sum_{g=1}^G V_g S_g G_g + \frac{1}{2\mu N^2} \sum_{g=1}^G \sum_{i=1}^{N_g} \sum_{k=1}^G \sum_{j=1}^{N_k} |Y_{gi} - Y_{kj}|
 \end{aligned}$$

Where Y_{gi} = income of i^{th} member of subgroup g ,
 Y_{kj} = income of j^{th} member of subgroup $k \neq g$,
 $V_g = \frac{N_g}{N}$ or population share of subgroup g , and
 $S_g = \frac{\mu_g N_g}{\mu N}$ or income share of subgroup g .

The first term is the within-subgroup component (G^W in the literature). The second term, or G^A , can be rewritten as the population share weighted sum of Gini across subgroups g and k or G_{gk} , which equals $\frac{1}{2\mu N_g N_k} \sum_{i=1}^{N_g} \sum_{j=1}^{N_k} |Y_{gi} - Y_{kj}|$,

$\forall g \neq k$. G^A is equivalent to but not the same as G^{GB} in Dagum (1997), and is either larger than or equal to the between-subgroup inequality or G^B that is calculated from the mean income of subgroups. It equals the between-subgroup inequality only when the distributions of income within all subgroups are perfectly equal, i.e., $Y_{gi} = \mu_g, \forall i \in g$.

$$(A4) \text{ GINI} = \sum_{g=1}^G V_g S_g G_g + \sum_{g=1}^G \sum_{k=1}^G V_g V_k G_{gk}$$

If the gross Gini across subgroups (GAS) is defined as the average relative income gap across subgroups or

$$\frac{1}{2\mu(N^2 - \sum_{g=1}^G N_g^2)} \sum_{g=1}^G \sum_{i=1}^{N_g} \sum_{k=1}^G \sum_{j=1}^{N_k} |Y_{gi} - Y_{kj}|, \text{ then}$$

$$(A5) \text{ GINI} = \sum_{g=1}^G S_g V_g G_g + (1 - \sum_{g=1}^G V_g^2) \text{ GAS}$$

The term $(1 - \sum_{g=1}^G V_g^2)$, henceforth cohesion coefficient, captures the extent to which GAS contributes to total inequality. Its value is in the interval $[0,1]$ and equals 0 when there is only one subgroup. A larger number of subgroups or G , decreases $\sum_{g=1}^G V_g^2$ and consequently increases the contribution of inequality across subgroups to total inequality. Also, a more equal population share increases the contribution of inequality across subgroups. Equations A4 and A5 are not limited to conditions such as the mean income of all subgroups being the same or the distributions of income within all subgroups being non-overlapping. By Equation A6, GAS can be easily calculated.

$$\begin{aligned} \text{(A6)} \quad \text{GAS} &= [\text{GINI} - \sum_{g=1}^G S_g V_g G_g] / (1 - \sum_{g=1}^G V_g^2) \\ &= G^A / (1 - \sum_{g=1}^G V_g^2) \end{aligned}$$

Capital flows and political conflicts: Evidence from Thailand

Pongsak Luangaram and Yuthana Sethapramote

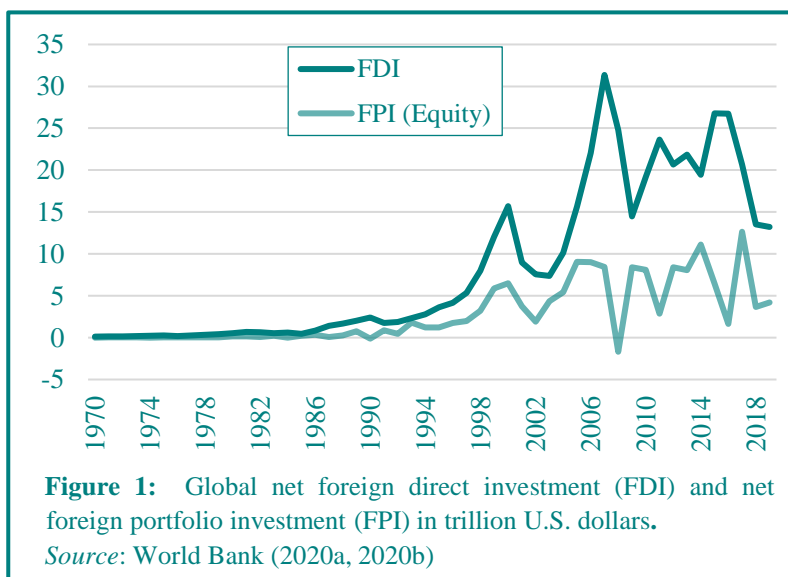
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Abstract

How do domestic political conflicts affect capital flows into Thailand? This article advances the current understanding in two ways. First, it adopts a new method for measuring political uncertainty using Thai-language newspapers over the past 20 years. Given that the nature of political conflicts is multi-faceted, these measures cover the various key components of Thai political tensions—both within and outside of parliament. Second, how different types of tensions affect capital flows are examined using a quantile regression framework—allowing an examination of effects upon the overall distribution of capital flows. The empirical results indicate that Thai political conflicts significantly and adversely affect both foreign direct investment and foreign portfolio investment at the left tails of their distribution. The results also highlight how different types of political conflicts affect capital flows in different ways. For example, uncertainty about a military coup and government measures regarding martial law or emergency decrees have a strong negative effect upon foreign direct investment flows; whereas heightened political protest and news about constitutional reform play a significant role in explaining the risk reversal of foreign portfolio investment flows.

Since the financial liberalization era of the early 1990s, understanding the evolution and determinants of global capital flows has become a subject of interest for academics and policymakers. For emerging market economies in particular, foreign investment flows are seen as an important catalyst for long-term economic development and welfare gains. In addition to providing external funding, foreign direct investments (FDI) bring in technology transfers and management innovations to a host country. Moreover, FDI from multinational companies links the host to the global value chain and helps to integrate local production into global markets, leading to improved efficiency and productivity in the production process. Since 1990, the global level of net capital inflows has surged in substantial ways and FDI has become the dominant type of investment flow.

Specifically, worldwide FDI increased from only USD 239bn in 1990 to a peak of USD 3trn in 2007. This is illustrated in Figure 1, which also shows net foreign



portfolio investments (FPI).¹

However, since the global financial crisis of 2008/9, significant changes in the overall landscape of global capital flows have emerged. As shown in Figure 1, both FDI and FPI contracted substantially and became more volatile when compared to the pre-2008 period. Similarly, net capital flows into Thailand have become more volatile post-2008—particularly unusual for foreign direct investment (FDI) flows which are ordinarily fairly stable. Figure 2 indicates a three-times increase in volatility in the ten years from 2008 than the previous decade. To put this into perspective, while the standard deviation of net capital flows into Thailand, as a percentage of GDP, rose by 70%, the standard deviation of net capital flows to other South-East Asian emerging economies (Indonesia, Malaysia, and the Philippines) increased by only 37% during the same period.²

Against this backdrop of a changing global capital flow landscape, Thailand presents an especially unique setting for the analysis of capital flow determinants in that it also suffered a series of prolonged, fully-fledged, and ongoing political crises. From 2006 to 2014, the country experienced a near-unprecedented degree of political violence and deep polarization—consuming 7 prime ministers and including 2 military coups. In its examination of Thailand, this article contributes to the literature in two ways. First, it emphasizes country characteristics, especially the role of political institutions in creating capital flow volatility post the global financial crisis—in particular, a novel approach to measuring different types of political tensions is applied. Second, the determinants of FDI and FPI are compared and contrasted. An empirical methodology is applied employing a quantile regression framework to explore the effect of Thailand’s political conflict on the whole distribution of these two types of capital flows.

Empirical studies on the macroeconomic cost of the various forms of political conflict have garnered much interest in recent years. For example, Dunne and Tian (2019) argues that the economic effect of civil conflict

Using a novel approach of keyword searches across 20 years of newspapers, this article identifies periods of specific types of political uncertainty. On examination of their effects upon capital flows, differing types of uncertainty are seen to effect foreign direct investment and foreign portfolio investment in diverse manners.

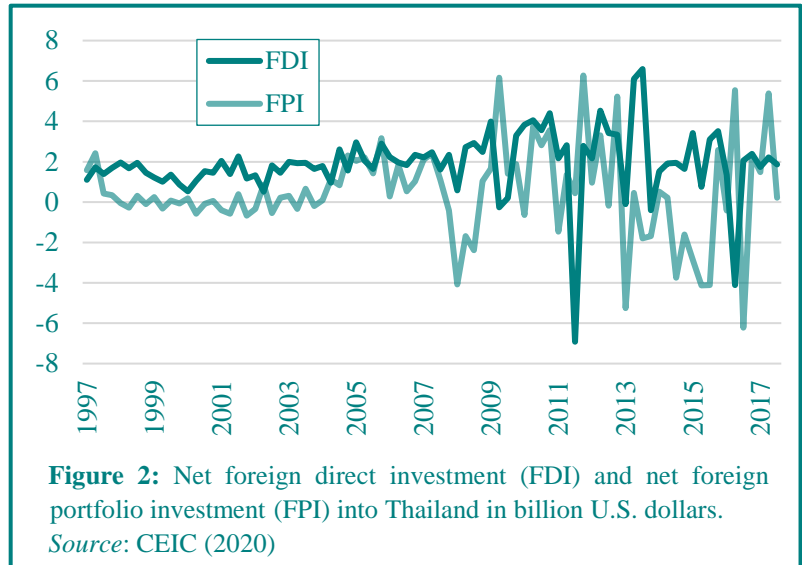


Figure 2: Net foreign direct investment (FDI) and net foreign portfolio investment (FPI) into Thailand in billion U.S. dollars.
Source: CEIC (2020)

can be exceptionally large for developing countries, and estimates that such conflicts reduces growth by over 1.5% per year for low-income African countries. Additionally, political risk has received attention in a number of recent studies as a key country risk factor for foreign investors and associated capital flows. For example, Cai and Menegaki (2019) finds that foreign investors are sensitive to U.S. trade policy-related conflict and that this can deter FDI flowing into the United States. Julio and Yook (2016) investigates the effect of political uncertainty on cross-border capital flows and finds that cross-border flows drop significantly during periods just before elections and increase only after the uncertainty is resolved. Azzimonti (2018a) shows that higher political fractionalization reduces levels of foreign investment and growth, and suggests an inverse relation between political risk and FDI. Several empirical studies emphasize the role of strong institutions in attracting capital flows (e.g., Sahu, 2020). Busse and Hefeker (2007) identify political risk indicators that matter most for the investment decisions

of multinational corporations and find that government stability, internal and external conflict, corruption and ethnic tension, law and order, government accountability and the quality of bureaucracy are statistically highly significant factors in explaining foreign investment flows.

At least nine different theoretical approaches (from neoclassical trade theory to an ownership, location, and international advantage framework) attempt to explain FDI and the investment decisions of multinational firms—

demonstrating the importance of heterogeneous models and empirical determinants in empirical studies.³

The next section discusses how this article measures the different dimensions of Thai political conflict. This is followed by a description of the data and the empirical methodology. The main findings are then presented, looking especially at the statistical results of various determinants, including political tension, on FDI and FPI flows into Thailand. The final section concludes with certain policy-related considerations.

Measuring Thai political conflict

While political risk is widely believed to negatively affect firms’ decisions to invest, any empirical analysis needs to define how political risk is measured. Some studies employ subjective expert surveys regarding factors such as the International Country Risk Guide (ICRG). Others use the World Bank’s worldwide governance indicators covering 6 dimensions of governance, including a political instability index measuring the *perception* of the likelihood of political instability. It is, however, difficult to perform time-series analysis at a country level using only 25 observations per

Table 1: Keyword sets for measuring Thai political conflicts

<i>Dimension of political uncertainty</i>	<i>Thai keywords</i>	<i>English translation</i>
1. Political protest	“ชุมนุม” และ “ขัดแย้ง”	“protest” and “conflict”
2. Martial law	“กฎอัยการศึก” หรือ “สถานการณ์ฉุกเฉิน”	“martial law” and “state of emergency”
3. Military coup	“ปฏิวัติ” หรือ “รัฐประหาร”	“revolution” or “coup”
4. General election	“ไทย” และ (“ยุบสภา” หรือ “เลือกตั้ง”)	“Thai” and (“parliament dissolution” or “election”)
5. Constitutional reform	[“การเมือง” และ “ปฏิรูป”] หรือ [(“รัฐธรรมนูญ” หรือ “รธน.”) และ (“ชก่าง” หรือ “แก้ไข”)]	[“politics” and “reform”] or [“constitution” and (“re-draft” or “amend”)]
Overall	All of the above	

Source: Luangaram and Sethapramote (2018).

country. In contrast, other studies use high-frequency financial market data to proxy the degree of political risk indirectly. However, it is hard to distinguish different *types* of political risk in all these types of studies.⁴

This article, in contrast, captures different types of political conflict and uses high-frequency data. The method is based on automated daily news article keyword searches (text mining), the results of which are easily updated in real time. It was assumed that greater media coverage of certain issues would indicate a higher degree of conflict/disagreement being involved. The methodology followed two main steps. First, determining a set of keywords believed to capture topics of interest. Second, counting (using automated computer searches) the number of articles that contain the pre-determined keywords. Using five Thai-language general newspapers, high-frequency data was collected from 1997 onwards. An overall political uncertainty index (PUI) was constructed with 5 “news about” components, *political protest, martial law or states of emergency, military coup, general election, and constitutional reform*. The first three are designated as “outside” the parliamentary system, and the latter two as “inside”.⁵

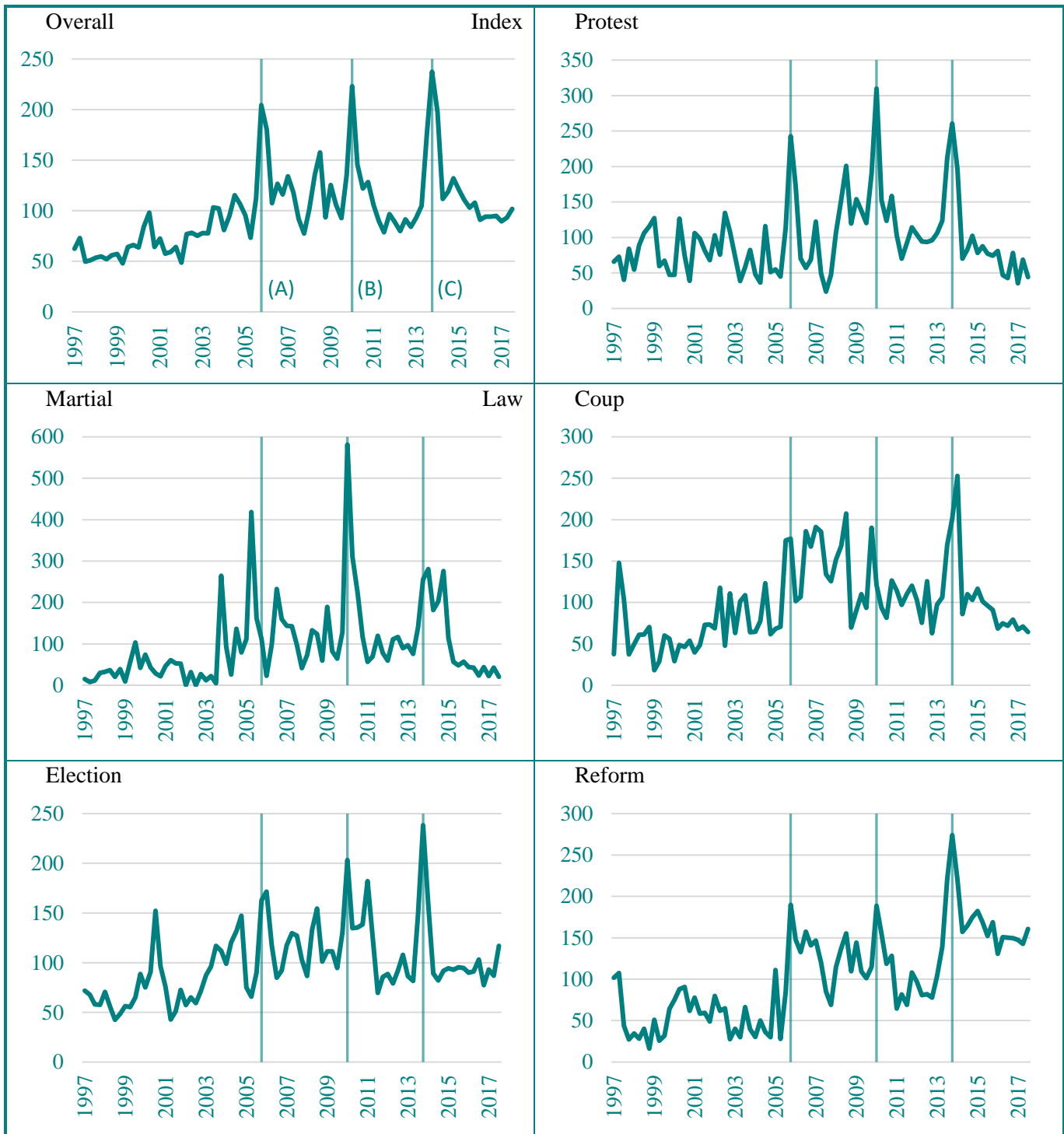


Figure 3: Thailand Political Uncertainty Index (PUI)
 Source: Luangaram and Sethpramote (2018).

The set of keywords used for each component are illustrated in Table 1, with all keywords being used to

measure overall political conflict. The keywords were carefully selected using the criteria that they should not

be too specific to any particular event, yet still be able to effectively identify the key relevant political events in Thailand over time.⁶

Figure 3 reveals the evolution of Thai political conflict since 1997 (overall and by sub-component). Overall Thai political uncertainty (top-left) rose over time with three major spikes, in 2006, 2010, and 2014. The most recent (and ongoing) Thai political crisis has its roots in 2006 when the then Prime Minister Thaksin Shinawatra was ousted from power by the military coup. Since then, political instability has stemmed from widespread protests. The spikes in overall conflict were due mainly to a series of violent incidents orchestrated by three political protest groups (see the top-right “protest” panel). First, the People’s Alliance for Democracy (PAD, popularly known as the Yellow Shirts) was formed in 2006 to oppose Thaksin Shinawatra (labeled “A” in the top-left panel)—eventually leading to the military coup of that year. In the aftermath, the United Front of Democracy Against Dictatorship (UDD, popularly known as the Red Shirts and viewed as the Yellow Shirts’ main rival) was formed to oppose the military government. Consequently, April/May 2010 saw major protests that are widely considered to be among the biggest in Thai history (labeled “B” in the top-left panel). Finally, the People’s Democratic Reform Committee (PDRC) was formed in 2013 to eradicate Thaksin’s political influence, This led to another military coup in May 2014 (labeled “C” in the top-left panel). While overall political conflict declined substantially after the 2014 coup, tension regarding constitutional reform remained high through to the end of the dataset in 2017 (bottom-right panel).

Data, model specification, and method

For the period of the study (Q2 1997 to Q4 2017), annual average Thai GDP growth was 3.40%—close to global GDP growth at 3.44%. The country’s average degree of trade openness (defined as the sum of exports and imports of goods and services to GDP) was 125% of GDP.

The dependent variables (measured in U.S. dollar terms to take a foreign investor’s perspective) and the

control variables (drawn from the extant literature on the determinants of capital flows) are summarized in Table 2.⁷

Pull factors provide information about the prevailing economic conditions of a host country. For example, GDP growth (YRG) and inflation (INF) characterize the host country’s economic condition with capital flows expected to respond to their movements—more growth, more foreign investment, for example. The government bond yield (INT) is used to indicate financial market conditions of a host country. A low rate should attract foreign investors (not to bonds, but to the country’s economy as a whole). Exchange rate volatility (FXvol) captures economic (in)stability. Generally, economic stability would advance foreign investors’ interests and hence positively affect capital flows. The real effective exchange rate (REER), and trade openness (OPEN), are also important factors for foreign investment decisions in small open economies. In the case of Asian countries, exports are the main source of growth. Hence, greater trade openness should result in greater capital flows. Exchange rate movements can affect capital flows either positively or negatively. For export-oriented industries, an appreciating exchange rate should be inversely related to capital flows. However, for industries relying on the import of capital goods, or on source funding from foreign investors, an appreciating exchange rate should decrease the cost of capital and, hence, result in a positive effect on capital flows.

Push factors include world GDP growth (YWG) which characterizes global economic conditions and, if positive, is also expected to positively affect capital flows. In addition, a rise in the world uncertainty index (WUI) is used as a proxy for global risk aversion behavior. Using the Asia Pacific sub-index of the WUI allows us to associate policy uncertainty at the regional level with capital flows. A higher degree of uncertainty is expected to inversely affect capital flows.

The Thai political uncertainty index (PUI), developed by Luangaram and Sethapramote (2018) is used to characterize key political risk aspects for Thailand—i.e., the components of protests, martial law/state of emergency, coups, elections, and reforms. The

Table 2: Data description, sources, and expected effects on capital flows.

<i>Abbreviation</i>	<i>Variable</i>	<i>Source</i>	<i>Unit</i>	<i>Expected effect on capital flows</i>
FDI	Foreign Direct Investment: Net	Bank of Thailand	millions USD	
FPI	Foreign Portfolio Investment: Total	Bank of Thailand	millions USD	
YRG	Real GDP of Thailand	National Economic and Social Development Board	% growth (YoY)	+
INF	Headline Inflation (YoY)	Ministry of Commerce	% growth (YoY)	+
OPEN	Degree of trade Openness	Calculate from (Export+Import/GDP)	% of GDP	+
REER	Real Effective Exchange Rate Index	Bank of Thailand	2012 = 100	+, -
Fxvol	Volatility of Thai baht/USD exchange rate	Calculated from GARCH(1,1)	%	-
INT	Treasury Bill & Government Bond Yield: 3 Year	Bank of Thailand	%	-
WUI	World uncertainty index (Asia-Pacific)	www.worlduncertaintyindex.com	normalized index	-
YRW	World GDP Volume Index	International Monetary Fund	% growth (YoY)	+
PUI	Thailand Political Uncertainty Index	Luangaram and Sethapramote (2018)	1997 = 100	-

Source: All data are collected from the CEIC (2020) except the WUI (Ahir *et al.*, 2018) and PUI (authors' calculation).

descriptive statistics and correlation coefficient among the dependent and independent variables can be found in Tables A1 and A2 (Appendix A).

To operationalize the capital flow variables, several measures of FDI and FPI are used in the literature. For example, the ratios of capital flows as a percentage of GDP or of capital flows per capita are often used in order to scale the value of FDI and FPI to country size in cross-country analysis.

To scale the fluctuation of capital flows for single country data, Baker *et al.* (2009) suggest measuring

capital flows as the percentage relative to the cumulative position at the beginning of a given period. Another alternative is to log-transform the squared value of capital flows normalized by their standard deviation; this avoids the problem of negative value flows and reduces fluctuations in the capital flow data. Recent studies have used scaled measures of FDI flows to estimate the relationship to independent variables in standard least squared regressions and in VAR models.⁸

This article has sought to find an explanation for capital flows in the case of extreme negative events

captured in the political conflict variables (PUI and its components). This requires a different econometric strategy i.e., to employ quantile regression to estimate the whole distribution of the flows. An advantage of the quantile regression approach is to allow investigation of the behavior of large inflows versus inflows of a smaller size. Therefore, unscaled capital flows are used to preserve the actual distributions of the dependent variables. Variable specifications in the models consist of the political conflict measures and the set of control variables already discussed. Dummy variables (carrying a value of 1 or 0) capture two specific events that may have affected Thai capital flows in unusual ways. The first of these (2011q4) captures the effect of catastrophic nation-wide floods in Thailand from October to December 2011. This natural disaster affected industrial estates in the central part of Thailand and delayed foreign direct investment. The second (2013q2) captures the U.S. Federal Reserve Bank’s “taper tantrum” event which followed the Federal Reserve’s surprise announcement to reduce the pace of its asset purchase program. At the time, this event caused the sudden movement of capital flows from the developing countries back to the United States.⁹

The main specification is

$$\begin{aligned}
 \text{CapitalFlow}_{i,t} = & \alpha_{i,j} + \\
 & \beta_{1,i,j} \Delta \ln PUI_{j,t} + \beta_{2,i,j} YRG_t + \\
 & \beta_{3,i,j} INF_t + \beta_{4,i,j} \Delta INT_t + \\
 & \beta_{5,i,j} OPEN_t + \beta_{6,i,j} FXvol_t + \\
 & \beta_{7,i,j} \Delta \ln REER_t + \beta_{8,i,j} \Delta \ln WUI_t + \\
 & \beta_{8,i,j} YRW_t + \theta_{i,j} Dummy_{i,t} + \varepsilon_{i,j,t}
 \end{aligned}
 \tag{1}$$

where i and j represent the types of capital flows and the components of political uncertainty (with t being time). For the FDI equation, only the dummy variable for Q4 2011 was used. For the FPI equation, both dummy variables were included. The regressions are estimated by quantile regressions to identify the statistically crucial factors that have affected Thai capital flows.

Empirical results

First a baseline OLS (at means) equation is estimated and then modelled using quantile regressions with the

quantiles (q) $\{q = 0.05, 0.1, 0.25, 0.50, 0.75, 0.90, 0.95\}$. Results of the FDI and FPI regressions are shown in Tables 3 and 4, respectively.

As shown in Table 3, the coefficients of overall political conflicts are statistically significant at the 5 and 10 percent level in the quantile regression of $q=0.05$ and $q=0.10$, respectively. The coefficient of political tension at $q=0.95$ has a significant positive effect at the 10 percent level. Looking at the quantile regression for PUI sub-indices, the main effect relates to the *reform* dimension of conflict (see Table 5). This might appear counter-intuitive, but news about reform may be viewed positively by foreign investors. A similar result is found in Portugal with Julio *et al.* (2013) providing evidence that reform, especially regarding the prevalence of corruption, could attract foreign direct investment. Nevertheless, the finding should be treated with some caution since the statistical significance level is not high.

Table 4 shows significant negative effects of political conflict on FPI flows at the 1 percent level of statistical significance for the quantile regression of $q=0.05$. There is no significant relation for either FDI or FPI using the mean level OLS regression. The findings thus highlight the effect of Thai political risk on capital flows mainly at extreme negative events rather than at the conditional mean.

Regarding the pull and push control factors, in addition to political conflict, foreign exchange volatility is a main factor explaining both FDI and FPI, especially in the left tails (the negative side of capital flows). For the macroeconomic factors (Table 3), trade openness is the crucial pull factor that attracts capital flows into Thailand, especially for the case of FDI flows. The results underline the nature of the FDI in Thailand, namely the focus on export-oriented industries related to regional supply chains. For the other domestic (pull) factors, GDP growth and inflation have the expected effect on FDI in the left tail in the 5th quantile regression, which indicates that FDI is deterred in periods of weak economic performance. As for global (push) factors, neither world GDP growth nor the world uncertainty index significantly affect the whole distribution of FDI in the quantile regressions.

Table 3: OLS and quantile regression estimates of net USD foreign direct investment (FDI) flows into Thailand

Variables	OLS	Quantile Regressions						
	mean	5 th	10 th	25 th	50 th	75 th	90 th	95 th
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Political conflict	540 (0.436)	-2409** (0.023)	-1396* (0.077)	-602 (0.448)	488 (0.562)	1158 (0.195)	1802 (0.432)	1690* (0.067)
<i>Control Variables</i>								
GDP growth	-48 (0.447)	104** (0.023)	92* (0.077)	18 (0.850)	-69 (0.465)	42 (0.574)	-98 (0.140)	-144** (0.028)
Inflation	-3 (0.976)	311** (0.035)	61 (0.709)	138 (0.279)	14 (0.916)	15 (0.902)	-111 (0.495)	178 (0.447)
Interest rate	-102 (0.440)	-659* (0.055)	-331 (0.598)	-175 (0.317)	-7 (0.962)	115 (0.496)	-113 (0.503)	144 (0.588)
Openness	37*** (0.001)	41* (0.051)	27 (0.587)	33* (0.071)	25* (0.063)	20 (0.381)	79*** (0.003)	64*** (0.003)
REER	-568 (0.871)	-22507 (0.108)	8904 (0.342)	3764 (0.493)	-337 (0.939)	2243 (0.746)	2397 (0.836)	-27640* (0.068)
FX Volatility	-69 (0.611)	-644*** (0.003)	-461*** (0.002)	-394** (0.019)	-115 (0.615)	-90 (0.554)	23 (0.819)	-25 (0.846)
World Uncertainty	-367* (0.085)	-290 (0.353)	-489 (0.440)	-412 (0.178)	-163 (0.459)	-344 (0.362)	54 (0.964)	97 (0.861)
World GDP growth	48 (0.722)	142 (0.533)	45 (0.833)	31 (0.865)	83 (0.631)	-144 (0.300)	50 (0.763)	-28 (0.865)
dummy 2011q4	-9926*** (0.000)	-8170*** (0.000)	-7558*** (0.000)	-8921*** (0.000)	-9847*** (0.000)	-9368*** (0.000)	-12225*** (0.000)	-13752*** (0.000)
Intercept	-2724** (0.037)	-6669** (0.011)	-3421 (0.598)	-3442* (0.086)	-1256 (0.362)	477 (0.862)	-6051** (0.039)	-3602 (0.143)
R-squared	0.417	0.478	0.378	0.277	0.210	0.174	0.218	0.327
N		80	80	80	80	80	80	80

Note: The results are based on the OLS and quantile regressions for the whole distribution of the (unscaled) net foreign direct investment data of the following equation.

$$FDI_t = \alpha + \beta_1 \Delta \ln PUI_t + \beta_2 YRG_t + \beta_3 INF_t + \beta_4 \Delta INT_t + \beta_5 OPEN_t + \beta_6 FXvol_t + \beta_7 \Delta \ln REER_t + \beta_8 \Delta \ln WUI_t + \beta_9 YRW_t + \theta_1 Dummy2011q4_t + \varepsilon_t$$

PUI is the overall political uncertainty index *, ** and *** denote statistical significance at the 10, 5 and 1 percent level. The figure in the parentheses is the p-value.

Table 4: OLS and quantile regression estimates of USD net foreign portfolio investment (FPI) flows into Thailand

Variables	OLS		Quantile Regressions					
	mean (1)	5 th (2)	10 th (3)	25 th (4)	50 th (5)	75 th (6)	90 th (7)	95 th (8)
Political conflict	-1037 (0.255)	-6789*** (0.006)	-1746 (0.260)	-1556 (0.183)	-944 (0.438)	589 (0.693)	1665 (0.385)	-29 (0.987)
<i>Control Variables</i>								
GDP growth	39 (0.634)	317*** (0.006)	162 (0.260)	68 (0.349)	59 (0.503)	-41 (0.750)	-214 (0.344)	-105 (0.566)
Inflation	34 (0.870)	257 (0.277)	385 (0.012)	192 (0.198)	192 (0.258)	-11 (0.969)	-563 (0.117)	-409 (0.154)
Interest rate	86 (0.721)	-476 (0.188)	-12 (0.945)	-35 (0.875)	11 (0.969)	-11 (0.988)	-196 (0.461)	-537 (0.110)
Openness	13 (0.579)	-38 (0.367)	-58** (0.018)	-27 (0.173)	4 (0.881)	42 (0.460)	98*** (0.006)	151*** (0.000)
REER	3882 (0.644)	23947 (0.239)	1195 (0.846)	-506 (0.945)	526 (0.951)	8724 (0.730)	8591 (0.423)	16267 (0.135)
FX Volatility	650*** (0.000)	94 (0.775)	271 (0.212)	502*** (0.027)	704*** (0.000)	891*** (0.000)	1364*** (0.000)	894* (0.052)
World Uncertainty	71 (0.846)	-80 (0.897)	129 (0.738)	91 (0.838)	-462 (0.257)	1 (0.999)	1459** (0.024)	1780** (0.012)
World GDP growth	-22 (0.930)	446 (0.333)	317 (0.298)	156 (0.524)	2 (0.994)	20 (0.934)	352 (0.411)	-127 (0.703)
dummy 2011q4	-312 (0.765)	4996** (0.045)	3219** (0.011)	1446 (0.302)	-214 (0.890)	-2139 (0.242)	-5751*** (0.009)	-6702*** (0.006)
dummy 2013q2	-5860*** (0.000)	-1533 (0.397)	-2895** (0.010)	-4095*** (0.002)	-5991*** (0.000)	-7389*** (0.000)	-9156*** (0.000)	-9799*** (0.000)
Intercept	-1194 (0.640)	-1395 (0.730)	3297 (0.133)	1516 (0.512)	-678 (0.812)	-3695 (0.572)	-7874** (0.049)	-13103*** (0.002)
R-squared	0.167	0.255	0.288	0.209	0.136	0.138	0.237	0.344
N	80	80	80	80	80	80	80	80

Note: The results are based on the OLS and quantile regressions for the whole distribution of the (unscaled) net foreign portfolio investment data of the following equation.

$$FPI_t = \alpha + \beta_1 \Delta \ln PUI_t + \beta_2 YRG_t + \beta_3 INF_t + \beta_4 \Delta INT_t + \beta_5 OPEN_t + \beta_6 FXvol_t + \beta_7 \Delta \ln REER_t + \beta_8 \Delta \ln WUI_t + \beta_9 YRW_t + \theta_1 Dummy2011q4_t + \theta_2 Dummy2013q2_t + \varepsilon_t$$

PUI is the overall political uncertainty index, *, ** and *** denote statistical significance at the 10, 5 and 1 percent level. The figure in the parentheses is the p-value.

For the FPI flows of Table 4, the effects of trade openness on the positive side of flows are stronger than those of the negative counterpart. For the other pull factors, the results are similar to those of the FDI flows where GDP growth has a positive and significant effect only in the 5th quantile regression.

There is no evidence that FPI flows are much affected by inflation, bond yield, and the real exchange rate. For the push factors, world GDP growth still does not result in a significant effect on FPI flows. However, the world uncertainty index does significantly explain FPI flows in the right tails of the FPI distribution, meaning that the relative stability of regional risks is an important factor in attracting FPI during periods of large portfolio investment flows. For the quantile regressions, the R-squared of both the left and right tails of the distribution are generally higher than those of the median equation. To wit, the R-squared values of the median of the FDI and FPI regressions are equal to 0.21 and 0.16, respectively. In the case of the FDI and FPI regressions, the R-squared in the extremely bad capital flow period (5th quantile) are equal to 0.48 and 0.25, while those of the extremely good period are equal to 0.33 and 0.34. These results provide additional support for the argument that political conflict, apart from other risk factors, can explain capital flows during extreme events better than in periods of regular economic conditions.

Next, an evaluation is made of how foreign capital flows into Thailand are affected by the different components of political conflict. The results for the FDI and FPI flows are shown in Tables 5 and 6 respectively. There are differences, specifically in the case of FDI flows at $q=0.05$, the most important components of political risks in Thailand were *military coups* and government measures related to *martial law/states of emergency*. This indicates that political conflicts handled outside, rather than within, the normal operation of Thailand's parliamentary system are responsible for the negative effects on FDI flows. For FPI flows, it is *protests* and *reforms* that are statistically significant at the 1 and 10 percent levels, respectively. Comparing the movement of each of the five PUI components, the *protests* and *reforms* components show a higher degree

of persistence than other components. Thus, *protests* and *reforms* transmit their effects onto financial market risk and subsequently affect foreign portfolio investment.

Examining the effects of the control variables, the volatility of the foreign exchange rate and the national flood disaster (2011q4) turn out to be the important indicators affecting FDI flows (Table 5). The interest rate and inflation are the other pull factors that significantly affect FDI. The effect of the push factors, however, are not strong in the extreme left tail of the quantile regression ($q=0.05$). For FPI flows (Table 6), the great flood in Thailand (2011q4) is by far the most crucial event affecting capital flows. The U.S. Fed's policy of tapering its quantitative monetary easing in 2013 is not significant in the 5th quantile of FPI flows. The (domestic) pull factors have stronger effects on FDI than FPI flows. This is not surprising as in the 5th (most negatively volatile) quantile of extreme events, traditional factors such as GDP growth and bond yields are not expected to have a significant influence on the capital flows as the latter are much better explained by the extreme events dummy and the increasing concerns over Thailand's political stability.

Finally, the quantile process of the coefficients of political conflict from each of the FDI and FPI regressions are computed (see Figures 4 and 5). In most cases negative effects are found at the extreme left tail of the capital flow distribution ($q=0.05$; $q=0.1$). This finding implies that the various types of political conflict in Thailand are important risk factors explaining the downside risk of capital flows into the country.

The results from the median regressions ($q=0.5$) show that the coefficients are close to zero and, in most cases, not statistically significant. Hence, a "median" level of political conflict is apparently not a major concern for foreign investors, certainly not when compared to more adverse conditions. However the effects of political conflict at the right tails. Depending on the regression, the coefficients show both negative and positive signs in the 80th to 95th percentile ranges. In addition, the standard errors of the estimated coefficients are high, suggesting that for large capital inflows, foreign investors' responses to political conflict are inconsistent.

Table 5: Quantile regression estimates (q = 0.05) of USD net foreign direct investment (FDI) inflows for Thailand with sub-indices of PUI

<i>Variables</i>	<i>Overall</i>	<i>Protest</i>	<i>Martial</i>	<i>Coup</i>	<i>Election</i>	<i>Reform</i>
Political conflict	-2409** (0.023)	-90 (0.816)	-125** (0.023)	-2078** (0.011)	1017 (0.208)	-708 (0.137)
<i>Control Variables</i>						
GDP growth	-2409** (0.023)	-90 (0.816)	-125** (0.023)	-2078** (0.011)	1017 (0.208)	-708 (0.137)
Inflation	311** (0.035)	240 (0.239)	183 (0.309)	203 (0.117)	268 (0.123)	357** (0.028)
Interest rate	311** (0.035)	240 (0.239)	183 (0.309)	203 (0.117)	268 (0.123)	357** (0.028)
Openness	41 (0.051)	52 (0.128)	58 (0.116)	74 (0.040)	11 (0.724)	27 (0.245)
REER	-22507 (0.108)	-16227 (0.208)	-12072 (0.215)	-1964 (0.848)	376 (0.972)	-18460 (0.196)
FX Volatility	-644*** (0.003)	-717*** (0.002)	-644*** (0.001)	-677*** (0.001)	-693*** (0.002)	-699*** (0.003)
World Uncertainty	-290 (0.353)	-214 (0.462)	-491* (0.087)	-729* (0.056)	-455 (0.224)	-684 (0.135)
World GDP growth	142 (0.533)	147 (0.560)	117 (0.581)	-20 (0.921)	313 (0.156)	313 (0.264)
dummy 2011q4	-8170*** (0.000)	-6515*** (0.000)	-6671*** (0.000)	-7981*** (0.000)	-5796*** (0.000)	-7655*** (0.000)
Intercept	-6669** (0.011)	-8668** (0.040)	-8976* (0.063)	-10118** (0.043)	-3716 (0.317)	-5788* (0.053)
R-squared	0.482	0.478	0.465	0.470	0.465	0.472
N	80	80	80	80	80	80

Note: The results are based on the 5th quantile regressions of the net (unscaled) foreign direct investment's equation using the sub-categories of the political conflict's variables.

$$FDI_t = \alpha_j + \beta_{1,j} \Delta \ln PUI_{j,t} + \beta_{2,j} YRG_t + \beta_{3,j} INF_t + \beta_{4,j} \Delta INT_t + \beta_{5,j} OPEN_t + \beta_{6,j} FXvol_t + \beta_{7,j} \Delta \ln REER_t + \beta_{8,j} \Delta \ln WUI_t + \beta_{9,j} YRW_t + \theta_{1,j} Dummy2011q4_t + \varepsilon_{j,t}$$

where $j = \{\text{overall, protest, martial law, coup, election, reform}\}$

*, ** and *** denote statistical significance at the 10, 5 and 1 percent level. The figure in the parentheses is the p-value.

Table 6: Quantile regression estimates (q = 0.05) of USD net foreign portfolio investment (FPI) inflows for Thailand with sub-indices of PUI

<i>Variables</i>	<i>Overall</i>	<i>Protest</i>	<i>Martial</i>	<i>Coup</i>	<i>Election</i>	<i>Reform</i>
Political conflict	-6789*** (0.006)	-2141*** (0.005)	261 (0.195)	-1649 (0.246)	3155 (0.174)	-2731* (0.071)
<i>Control Variables</i>						
GDP growth	317** (0.032)	234*** (0.005)	224 (0.195)	198 (0.334)	119 (0.221)	177 (0.244)
Inflation	257 (0.277)	296 (0.234)	315 (0.320)	312 (0.347)	355* (0.074)	436 (0.104)
Interest rate	-476 (0.188)	-962 (0.257)	-1062 (0.291)	-76 (0.861)	-296 (0.431)	-1008 (0.284)
Openness	-38 (0.367)	-11 (0.848)	-27 (0.640)	-102** (0.048)	-91** (0.012)	-15 (0.755)
REER	23947 (0.239)	-2497 (0.895)	-21175 (0.568)	5114 (0.849)	-6868 (0.605)	-12350 (0.715)
FX Volatility	94 (0.775)	58 (0.845)	81 (0.808)	237 (0.379)	180 (0.630)	48 (0.873)
World Uncertainty	-80 (0.897)	-13 (0.986)	-2126 (0.080)	-2258 (0.338)	-1578* (0.059)	-1356 (0.349)
World GDP growth	446 (0.333)	775* (0.095)	763 (0.124)	279 (0.534)	313 (0.401)	576 (0.245)
dummy 2011q4	4996** (0.045)	4639*** (0.004)	4527** (0.043)	6430** (0.044)	7081** (0.019)	3368* (0.061)
dummy 2013q2	-1533 (0.397)	-1936 (0.221)	-2565 (0.197)	-2135 (0.163)	-1629 (0.440)	-1779 (0.337)
Intercept	-1395 (0.730)	-5656 (0.469)	-4267 (0.590)	7383 (0.177)	6093 (0.121)	-4950 (0.524)
R-squared	0.255	0.292	0.228	0.229	0.225	0.254
N	80	80	80	80	80	80

Note: The results are based on the 5th quantile regressions of the net (unscaled) foreign portfolio investment's equation using the sub-categories of the political conflict's variables.

$$FPI_t = \alpha_j + \beta_{1,j} \Delta \ln PUI_{j,t} + \beta_{2,j} YRG_t + \beta_{3,j} INF_t + \beta_{4,j} \Delta INT_t + \beta_{5,j} OPEN_t + \beta_{6,j} FXvol_t + \beta_{7,j} \Delta \ln REER_t + \beta_{8,j} \Delta \ln WUI_t + \beta_{9,j} YRW_t + \theta_{1,j} Dummy2011q4_t + \varepsilon_{j,t}$$

where $j = \{\text{overall, protest, martial law, coup, election, reform}\}$

*, ** and *** denote statistical significance at the 10, 5 and 1 percent level. The figure in the parentheses is the p-value.

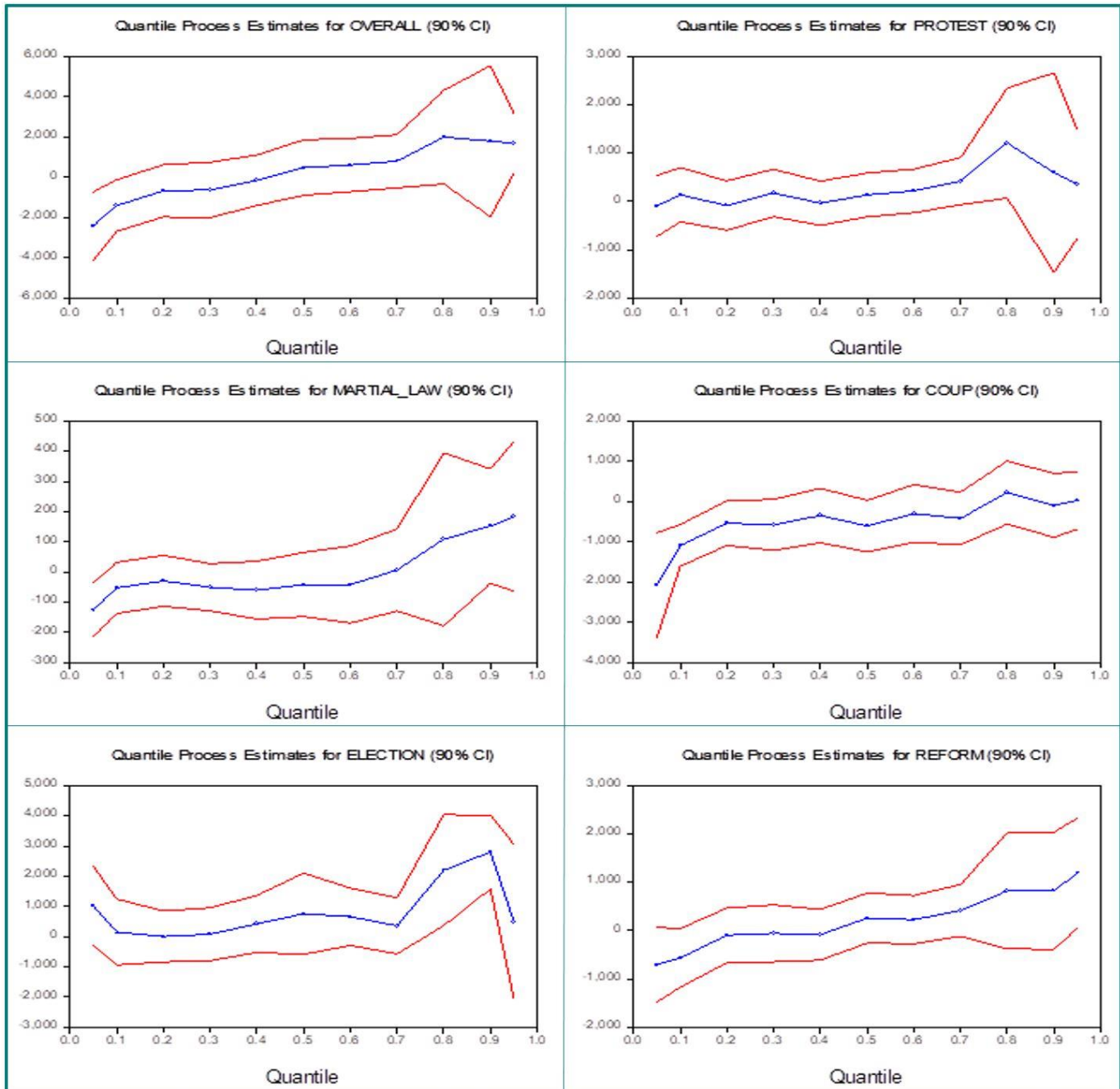


Figure 4: Quantile process estimates for overall political risk and its dimensions on the foreign direct investment (FDI) regressions

Note: The results are based on the quantile regressions for the whole distribution of the (unscaled) net foreign portfolio investment's equation using the sub-categories of the political conflict's variables.

$$FDI_t = \alpha_j + \beta_{1,j} \Delta \ln PUI_{j,t} + \beta_{2,j} YRG_t + \beta_{3,j} INF_t + \beta_{4,j} \Delta INT_t + \beta_{5,j} OPEN_t + \beta_{6,j} FXvol_t + \beta_{7,j} \Delta \ln REER_t + \beta_{8,j} \Delta \ln WUI_t + \beta_{9,j} YRW_t + \theta_{1,j} Dummy_{2011q4_t} + \varepsilon_{j,t},$$

where $j = \{\text{overall, protest, martial law, coup, election, reform}\}$

The blue lines present the estimated coefficients of $\beta_{1,j}$. The red lines indicate the 90th confidence interval.

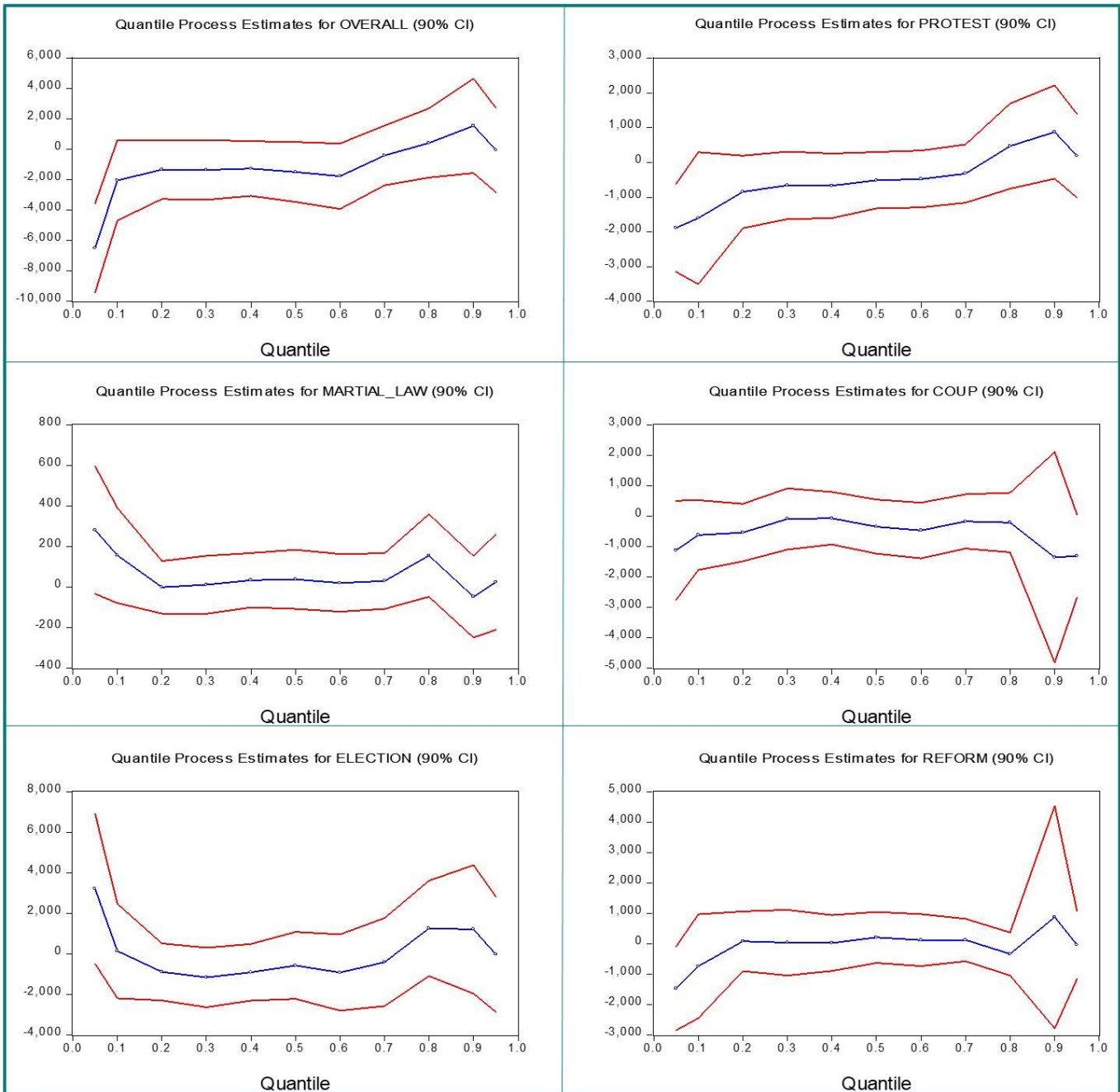


Figure 5: Quantile process estimates for overall political risk and its dimensions on the foreign portfolio investment (FPI) regressions

Note: The results are based on the quantile regressions for the whole distribution of the (unscaled) net foreign portfolio investment's equation using the sub-categories of the political conflict's variables.

$$FPI_t = \alpha_j + \beta_{1,j} \Delta \ln PUI_{j,t} + \beta_{2,j} YRG_t + \beta_{3,j} INF_t + \beta_{4,j} \Delta INT_t + \beta_{5,j} OPEN_t + \beta_{6,j} FXvol_t + \beta_{7,j} \Delta \ln REER_t + \beta_{8,j} \Delta \ln WUI_t + \beta_{9,j} YRW_t + \theta_{1,j} Dummy2011q4_t + \varepsilon_{j,t} ,$$

where $j = \{\text{overall, protest, martial law, coup, election, reform}\}$

The blue lines present the estimated coefficients of $\beta_{1,j}$. The red lines indicate the 90th confidence interval.

Conclusion

This article is motivated by a need to better understand capital flows in the aftermath of the global financial crisis of 2008/9 when both foreign *direct* investment and foreign *portfolio* investment flows became more volatile than before. In addition, for Thailand, there is also a need to examine the multifaceted nature of its political turmoil, especially from 2006 onward. The resulting conflict has been almost wholly unprecedented and has created a deep polarization within the country.

Examining how different types of political conflict affect foreign investors' decisions to place direct or portfolio investments in Thailand indicates that heightened political conflict significantly and adversely influences both types of capital flows at the left tail of the distribution, depriving Thailand of foreign capital inflows, but did not affect the mean of these flows. Furthermore, the downside risk of foreign direct investment and portfolio investment flows respond differently to the different types of political conflict. In particular, conflicts originating outside parliament, namely the imposition of *martial law/states of emergency* and of *military coups* are statistically significant downside risk factors for foreign direct investment. Foreign portfolio investment, however, reacts more to political conflict in the form of *protests* and parliamentary-driven *reforms*.

Overall, the article highlights foreign investors' heterogenous responses to different types of political conflict. Given that capital flows are of crucial importance for the Thai economy, the country's export capacity and its international competitiveness depend on its ability to attract foreign direct investment. It is therefore important to address the root sources of the political turmoil experienced since 2006 and to mitigate the resulting capital flow volatility on Thailand's economy.¹⁰

Notes

1. FPI equity includes net inflows from equity securities other than those recorded as direct investment and including shares, stocks, depository receipts (American or global), and direct purchases of shares in local stock markets by foreign investors. FDI refers to direct

investment equity flows in the reporting economy. It is the sum of equity capital, reinvestment of earnings, and other capital. Direct investment is a category of cross-border investment associated with a resident in one economy having control or a significant degree of influence on the management of an enterprise that is resident in another economy. Ownership of 10 percent or more of the ordinary shares of voting stock is the criterion for determining the existence of a direct investment relationship. The global sum does not necessarily equal zero as the net inflows to a country measure flows due to non-residents.

2. See also Hannan (2018). Emerging economies: 37% is the authors' own calculation drawn from CEIC (2020).

3. For a detailed survey of the nine approaches, see Faeth (2009).

4. Worldwide governance indicators are: Voice and accountability; political instability and absence of violence; government effectiveness; regulatory quality; rule of law; and control of corruption. Proxy data: Bekaert, *et al.* (2014).

5. Assumption: The methodology follows Baker, *et al.* (2016), which constructs an economic policy uncertainty index, and Azzimonti (2018b), which employs a similar method for measuring political partisan conflicts. General newspapers: Based on Luangaram and Sethapramote (2018).

6. The choice of keywords is validated in Figure 3, with its frequency spikes matching the timing of all the major political events in Thailand. It may be asked whether this method of quantifying political conflict via Thai-language newspapers can be considered an unbiased measure and, more specifically, why foreign investors should be expected to react to Thai, rather than English-language newspapers. In response to this challenge, the aim of the keyword search is to capture political events rather than political perspectives. When there are major political events, most, if not all, Thai and English newspapers will cover these events. Indeed, as a robustness check, it was found that there was a high correlation between the measures constructed from Thai newspapers versus those from English newspapers. In addition, suitable English newspapers commenced in 2006, giving a smaller time-series than that provided by Thai-language newspapers.

7. Domestic (or pull) factors are real GDP growth (YRG), inflation (INF), the 3-year government bond yield (INT), trade openness (OPEN), the real effective exchange rate index (REER), and the exchange rate

volatility of the domestic currency (FXvol), where REER is a trade weighted index obtained from the Bank of Thailand. We computed FXvol using a standard conditional volatility GARCH (1,1) model. Nondomestic global (or push) factors are world GDP growth (YWG) and a world uncertainty index (WUI), the latter tracking uncertainty across the globe using text-mining methods to extract information from the country reports of the Economist Intelligence Unit (Ahir *et al.*, 2018). The index is available for 143 countries.

8. Scaling: Busse and Hefeker (2007); Nguyen, *et al.* (2020); Sahu (2020). Log-transform: Busse and Hefeker (2007). Least squared: Azzimonti (2019). VAR: Cai, *et al.* (2019)

9. Quantile regression: Sahu (2020).

10. Capital flows: Nidhiprabha (2017).

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Appendix A: Descriptive statistics and correlation coefficients among the dependent and independent variables

Table A1: Descriptive statistics of the macroeconomic, financial market and risk variables

	<i>YRG</i>	<i>INF</i>	<i>INT</i>	<i>OPEN</i>	<i>REER</i>	<i>FXVOL</i>	<i>WUI</i>	<i>YRW</i>
Mean	3.40	2.42	3.65	125.46	93.92	0.0011	642	3.44
Median	3.82	2.02	3.06	126.79	95.61	0.0005	614	3.50
Maximum	15.30	10.23	15.29	150.36	109.44	0.0114	1,977	6.11
Minimum	-12.20	-2.73	1.45	88.89	76.36	0.0000	98	-2.91
Std. Dev.	4.13	2.43	2.64	12.77	8.59	0.0019	336	1.64
Skewness	-1.16	0.83	3.01	-0.54	-0.18	4.08	1.07	-1.59
Kurtosis	6.42	4.08	12.57	3.13	1.74	19.92	5.03	6.84

Source: Authors' calculations.

Table A2: Correlation coefficients between the capital flows and the determinant variables.

	<i>FDI</i>	<i>FPI</i>	<i>PUI</i>	<i>YRG</i>	<i>INF</i>	<i>INT</i>	<i>OPEN</i>	<i>REER</i>	<i>FXVOL</i>	<i>WUI</i>	<i>YRW</i>
FDI	1.00										
FPI	0.05	1.00									
PUI	0.27	-0.01	1.00								
YRG	0.12	0.09	0.11	1.00							
INF	0.04	0.02	-0.01	-0.34	1.00						
INT	0.00	-0.01	-0.30	-0.61	0.71	1.00					
OPEN	0.15	0.07	0.50	0.26	0.22	-0.33	1.00				
REER	0.22	-0.05	0.43	0.01	-0.21	-0.33	0.33	1.00			
FXVOL	-0.06	-0.04	-0.41	-0.56	0.54	0.90	-0.48	-0.43	1.00		
WUI	-0.05	-0.03	0.00	0.31	-0.08	-0.29	0.17	-0.01	-0.26	1.00	
YRW	0.06	0.04	0.21	0.44	0.27	0.01	0.33	-0.01	-0.03	-0.07	1.00

Source: Authors' calculations.

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