Background
Many African countries, after they regained their independence, have experienced multiple political instabilities (PI). While PIs are common, their causes and consequences are unique. In this work, we focus on PIs that lead to a change of political regime.

A common motivation for PI and eventually political regime change is to improve social and economic status of the country. Yet, studies have shown that PIs tend to generate the opposite effect (e.g., Alesina et al. 1996, Barro 1991, Gyimah-Brempon and Traynor 1996). For instance, in 29 Sub-Saharan African countries, PIs retarded the growth rate of Gross Domestic Product (GDP) and regressed Human Development Index (HDI) (Fosu 2004).

Madagascar has experienced multiple PIs. Since its independence in 1960, the country underwent four major regime changes in 1972, 1991, 2001, and 2009. The motivations and the ways each crisis unfolded all differed. Up to date, there are no published studies that investigated the consequences of these PIs on the country's economy.

Research questions and methods
In this work, we ask if there is an immediate and long-term relationship between the type of PI (e.g., motivation, duration, spatial extent, constitutional or not, etc.) and the economy. The main data consists of time-series of several macroeconomic indicators (including GDP and its derivatives, HDI, external aid, etc.) from 1960 until present.

We hypothesize that: (i) each PI will cause an abrupt change in those indicators, (ii) the magnitude of the drop correlates positively with the type of the PI (see metric above), and (iii) each PI is preceded by accelerated changes in some indicators (e.g., well-being, poverty, inflation rate, diplomatic relation). To answer these questions, we will use Bayesian Change Point analysis (Erdman and Emerson 2007), descriptive or simple regression, and early warning signal (Dakos et al. 2012) for (i), (ii), and (iii), respectively.

We are still in the process of acquiring data and questions and methods might be altered depending on the availability and reliability of the data.

Preliminary results
We found no conspicuous effect of the PIs on the Malagasy GDP (either for total or per capita, Fig. 1, left panel). However, GDP growth declines abruptly for each PI where the highest magnitude occurred in 2002 (Fig. 1, right panel). The converse is not true: a sudden decline in GDP in 1981 was not driven by a PI.

Significance
No study has explored the economic impact of political crises in Madagascar. This work will provide a better understanding of these crises, assess the resilience of the economy, and help anticipating future crisis and mitigating future economic impact.
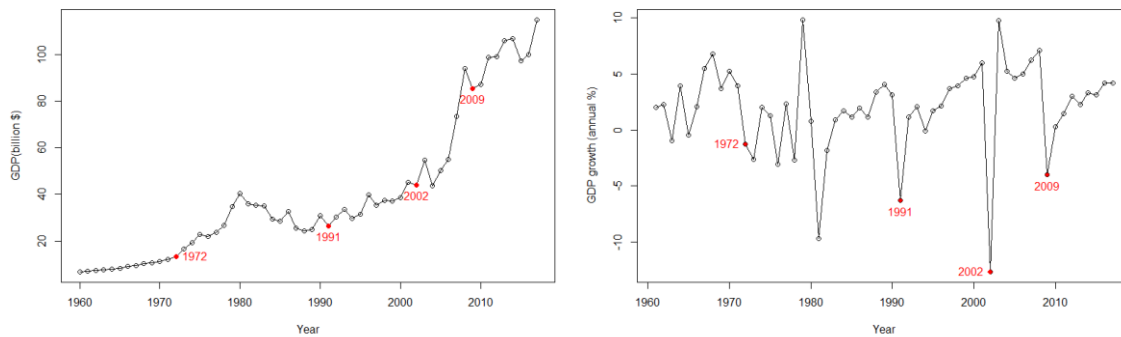
Figure 1: a) Madagascar GDP (billion $) over 1960-2017 b) Madagascar GDP growth (annual %) over 1960-2017
Source: From World Bank data 2018 (https://data.worldbank.org/)

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