When Would an Autocrat Open the Emigration Floodgates?

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Abstract

This paper provides explains why autocratic governments draft the emigration policy so that emigration is sometimes easy for citizens, sometimes almost impossible. There are clear gains in opening the floodgates: If more citizens leave the country, fewer citizens will participate in revolutionary activities, making it more likely for the government to remain in power. Under certain conditions, this improvement in stability dominates the loss in GDP caused by emigration.

1 Introduction

In an autocracy, the autocrat chooses what he/she wants. Emigration policy is a crucial part in the choice set since it can be used to manipulate the domestic demographic characteristics and hence citizens' behavior. History does witness a lot variations of emigration policies in autocracies both across time and region. The

Soviet government strictly limited emigration from the late 1920s to the 1970s. The Berlin Wall existed from 1961 to 1989. China also experienced changes in emigration regulations since the formulation of People's Republic of China in 1949. North Korea, in contrast, sticks to the no-migration policy and is infamous for heavy penalties for defection. This paper provides a simple model that integrates the government's choice, citizens' emigration decision and revolution decision to analyze the costs and benefits of opening the floodgates. The following scrutinization of emigration policy changes in China motivates this model.

Before 1949 most Chinese emigrants were low-skilled labor and refugees to countries in Asia and the Americas. People were prevented from leaving the country during the planned economy era from 1949 to the late 1970s.[1] Most people could not apply for a passport. Even moving within China was strictly restricted. The ban on migration was gradually lifted following the Opening Up reform since 1978. Many people were able to reunite with their family members overseas as a result of liberalized emigration policies. China started to export a large amount of labor (mainly low-skilled) to the world. Thousands of students were sponsored by the government to study abroad each year since the early 1980s. The slogan was "努力学习，学成回国，报效祖国", translated as "study hard (abroad), come back after graduation to repay your motherland." The wave of self-financed student emigrants came along with the boost in Chinese economy and the adoption of a more flexible policy on studying abroad in 1984. The Chinese Communist Party's new slogan in 1992 was "支持留学，鼓励回国，来去自由", meaning that "students should be supported to study abroad, encouraged to return to China but free to choose whether to return". The outflow of students grew while the returning rate decreased during this period.

Why did the government's policy change so much in such a short time? One

[1]More than two million people illegally emigrated to Hong Kong in this period, though.

thing that must not be ignored is the 1989 Tiananmen Square protests. Students led hunger strikes and sit-ins in Tiananmen square in Beijing starting from April, calling for democracy, freedom of speech and the press, and constitutional due process. Demonstrations soon spread to about 400 cities nationwide by May. The protests in Beijing were suppressed on June 4th by troops with rifles and tanks under the orders of the government. Mass arrests were carried out afterwards. The Beijing Public Security Bureau identified 21 students as leaders of the protests. Seven of them fled to Hong Kong, Taiwan, and United States, while the rest were arrested and spent a few years in prison. Eight imprisoned students went to top universities abroad after they were released and settled overseas eventually.

Why were some student leaders in the list never arrested? Was it because they ran away fast or because the government turned a blind eye? Why did the Chinese government issue passports to these imprisoned student leaders after they were released? I conjecture that the government let these students go abroad to avoid any potential disturbance. It may be true that the government did not arrest all 21 students in 1989 simply due to incapability. But what happened decades later when the government was clearly able to imprison them is worth investigating: Several students who ran away in 1989 successfully entered China decades later despite the fact that Beijing has never retracted the most-wanted list. Wu'erkaixi tried several times to go back to mainland China to turn himself in to the police after 2004 but was deported every time. The way the government dealt with these student leaders, paired with the relaxation of study abroad regulations since 1992 could both be considered a way to reduce threats from students.

The contemporary migration trends in China are summarized as follows. The four most popular ways of emigration are: (i) The rich invest in the destination country to obtain permanent residence. (ii) Highly skilled labor and students move to countries such as the United States, the United Kingdom, Canada and

Australia (the brain drain). A number of policies encouraging returns of this group, either temporarily or permanently, have been introduced. But there is no exit controls generally. Returning is a choice but not a requirement, except for less than five percent of government-sponsored students. (iii) Family members apply for immigrant visas as dependents of the rich and the highly skilled. (iv) The unskilled emigrate through project-tied collective labor deployment and individual overseas employment. However, the application fee is high and they are required to return upon the completion of a job contract. [2] Meanwhile, the number of permanent immigrants to China are extremely small and negligible compared to that of emigrants. There are about five millions more emigrants than immigrants each year (Xiang, 2016).

Constantly losing young and educated labor force harms the productivity and hence the GDP. So there must be some benefits of opening the floodgates that dominates this loss in productivity under certain conditions. This model combines revolution and emigration and shows that under certain conditions the gains of relaxing emigration policies dominates the loss in GDP. Two important assumptions are used to make the model tractable. First, I assume that there is only one representative strategic citizen who chooses either to stay in the country (and not protest), stay and protest or emigrate. All other citizens are assumed to be non-strategic. This representative strategic citizen captures the small group of citizens who are able to and believe that they can potentially take over the autocracy and, if they cannot have their way, would emigrate if possible. They are not "cogs in the wheels" of the system who are playing by the rules or the social contract of the system. Typically they are young, educated and able to think outside the confines of the system. The student leaders of the 1989 Tianan-

[2]The common practice is to collect a deposit before they leave China and only return it after they board the airplane back home when the contract ends.

men Square protests are considered strategic citizens in China's case. It was not uncommon in history of other autocracies that the well-educated became revolutionary forces and posed threats to the government. Ho Chi-Minh, a founding member of the French Communist Party, the first leader of Vietnam's nationalist movement, and the symbol of Vietnamese liberation, received his political education in France from 1919 to 1923. The Gwangju Uprising in South Korea in May, 1980 was started by university students. They led demonstrations for an end to martial law and democratization. Lots of people who took over the former Soviet in the early 1990s were educated mathematicians and physicists and not those educated in Marxist political economy. This assumption greatly simplifies the analysis of the revolution decision by setting aside the coordination and free-riding problems that are common in protest models (Morris and Shin, 2001; Bueno De Mesquita, 2010). This allows me to focus on the interaction of revolution and emigration decisions. Second, I assume that the unknown true state of the world determines how hard it is to take over and that there are only two possible states. In one state the government is overthrown if and only if the strategic citizen protests; In another state the government never loses the office. By allowing the strategic citizen to leave on his/her own free will, the government faces a lower risk of losing the office.

2 Literature Review

Much attention has been given to reasons behind the rising interests in emigration in autocracies. Recent surveys show that around half of wealthy individuals in China have considered emigrating and/or sending their children abroad (Hurun, 2016). Three possible motivations are on the table: higher quality of education abroad, higher quality of life abroad, and a broader concern about the political, social and economic stability in China (Xiang, 2016; Huang, 2017).

However, little of the literature on immigration sheds light on the other side of the story. Knowing what incentives and strategies available the game players (citizens) face, it is natural to take a further step to analyze the choice of the game designer (the autocrat). Since the autocrat has *de facto* power to modify the emigration policy to their taste, why do they write the emigration policy such that emigration is possible for some citizens but almost impossible for the rest? To answer this question I combine the government's choice of emigration policies, the citizens' emigration choice and revolutionary action.

Some of the literature on Arab Spring also discuss the relationship between political movements and population movements but are mostly empirical and case studies (Boubakri, 2013; Fargues, 2017). Sellars (2019) models the interaction between migration and collective action with empirical evidence from Mexico and Japan but assumes in her model that individuals' choice space is exogenously given. Her model shows how emigration can reduce pressure on the government; My model allows the government to manipulate the cost of emigration and therefore alters the set of feasible choices available to citizens and looks at how this interaction impacts the government's choices as it is torn between fear of losing talents and liking for stability.

3 The Model

Consider a representative strategic citizen who maximizes her expected income by choosing from the action space $\{Stay, Emigrate, Protest\}$.[3] The citizen earns wage $(1-\tau)w$ after tax if she stays in the country, where τ is the fixed income tax rate. Or, she can pay an emigration cost c to emigrate and earn αw abroad (also after tax) with $\alpha > 1-\tau$. Notice that the citizen's wage abroad is assumed to be

[3] I use one representative strategic citizens to avoid the free-ride problem and the coordination problem in the revolution game.

proportional to her domestic wage. It captures the idea that the citizen's wage reflects her ability and that countries differ in average wage levels. Alternatively she can work in the home country and, at the same time, pay an upfront cost κ to participate in an underground protest against the government.

Other citizens in this country are assumed to be non-strategic: They never move to another country or participate in a protest. Loyalty to the ruling party, for example, could be the reason why some citizens do not behave strategically. Since the incumbent party cares only about the behavior of the representative strategic citizen, the fraction of non-strategic citizens is irrelevant. Denote the total income of non-strategic citizens before tax by γw.

If the protest succeeds, the incumbent party is overthrown and the strategic citizen receives $\beta + (1-\tau)w - \kappa$, where β represents the benefit of taking the office; Otherwise, the incumbent party remains in office and collects tax and the strategic citizen gets only $(1-\tau)w - \kappa$.

The unknown true state of the world $T \in \{B, G\}$ determines how hard it is to overthrow the incumbent party. A bad state $T = B$ means that the protest succeeds if and only if the strategic citizen protests; while a good state $T = G$ means that a protest can never succeed. A common prior on the distribution is assumed:

$$P(T = B) = \eta, P(T = G) = 1 - \eta.$$

The risk-neutral incumbent party collects the flat-rate income tax if the protest fails and incurs a loss L if the protest succeeds. The loss L represents the disutility from being overthrown. The objective function of the government is given by

$$\pi = \tau Prob(\text{protest fails})\mathbb{E}(GDP|\text{protest fails}) - Prob(\text{protest succeeds})L.$$

The first term is the expected amount of tax the government collects. Note that

"tax" in this model represents what the ruling party takes away from its citizens and puts into its' own pocket. Corruption, for example, is considered as part of this tax. Public spending, however, is not included in this tax.

Table 1 summarizes the return to the citizen and the government under different results of the protest.

		Result of the protest	
		Succeed	Fail
Citizen	Stay	$(1-\tau)w$	$(1-\tau)w$
	Emigrate	$\alpha w - c$	$\alpha w - c$
	Protest	$\beta + (1-\tau)w - \kappa$	$(1-\tau)w - \kappa$
Government		-L	τ*GDP

Table 1: Return to the citizen and the government

Potentially, the government can manipulate emigration cost c by modifying emigration policies, the participation cost κ by adjusting regulations regarding protests, as well as the tax rate τ. The following sections discuss what happens if the government is allowed to choose c only, τ only, or both (c, τ). In each case, the representative citizens makes her choice after observing the government's choice without knowing the true state. Finally, the true state is realized and everyone gets their return.

4 Benchmark I: The Government Chooses c

The citizen simply chooses the action that gives her the highest return:

$$\max\{(1-\tau)w, \alpha w - c, \eta\beta + (1-\tau)w - \kappa\}.$$

Let $(1-e-p, e, p) \in \Delta(\{Stay, Emigrate, Protest\})$ be the strategic citizen's equilibrium strategy. The same notation is also used in the rest of the paper.

Recall that the protest succeeds if and only if $T = B$ and the citizen chooses *Protest*. Note that $p > 0$ requires

$$\eta\beta + (1-\tau)w - \kappa \geq \max\{(1-\tau)w, \alpha w - c\}.$$

Proposition 1. *If $\eta\beta > \kappa$ and $\tau w(1-\eta(1+\gamma)) \leq \eta L$ the government chooses any $c < (\alpha+\tau-1)w + \kappa - \eta\beta$ such that $e = 1$ and $\pi = \tau\gamma w$.*

If $\eta\beta > \kappa$ and $\tau w(1-\eta(1+\gamma)) \geq \eta L$ the government chooses any $c > (\alpha+\tau-1)w + \kappa - \eta\beta$ such that $p = 1$ and $\pi = (1-\eta)\tau(1+\gamma)w - \eta L$.

Proof. If $\eta\beta > \kappa$ then *Protest* strictly dominates *Stay* and hence $1-e-p$ must be zero. If $c > (\alpha+\tau-1)w+\kappa-\eta\beta$ then $p = 1$ and $\pi = (1-\eta)\tau(1+\gamma)w-\eta L$. If $c < (\alpha+\tau-1)w+\kappa-\eta\beta$ then $e = 1$ and $\pi = \tau\gamma w$. Therefore, $c < (\alpha+\tau-1)w+\kappa-\eta\beta$ is optimal for the government if $(1-\eta)\tau(1+\gamma)w-\eta L \leq \tau\gamma w$, which is equivalent to $\tau w(1-\eta(1+\gamma)) \leq \eta L$; And $c > (\alpha+\tau-1)w+\kappa-\eta\beta$ is optimal for the government if $\tau w(1-\eta(1+\gamma)) \geq \eta L$. □

If *Stay* is never the citizen's best choice, it is possible that a low emigration cost is optimal for the government. More specifically, when the disutility of losing office is big enough ($\tau w(1-\eta(1+\gamma)) \leq \eta L$) making the citizen leave the country is optimal for the government.

An example of this case where emigration is an affordable choice while the government is worried about the stability of society is China in the 1980s. During this period, the economy of China is relatively undeveloped, making the difference between domestic wage and foreign wage huge (α is big), while η is relatively high.

In 1972, would-be emigrants of the USSR had to pay a fee as high as twenty times an annual salary for the higher education they received in the USSR. The choice of a big c was intended to alleviate the brain drain but was soon revoked as it caused international condemnations. The Dymshits–Kuznetsov hijacking

affair in 1970, an attempt by 16 Soviet refuseniks to steal a civilian aircraft and escape to the West, was followed by the Soviet Union aliyah, the mass emigration of Soviet Jews to Israel. The hijacking affair could be interpreted by the Soviet government as a signal that η increased.

Proposition 2. *If $\eta\beta < \kappa$ the government chooses any $c > (\alpha + \tau - 1)w$ such that $e = p = 0$ and $\pi = \tau(1 + \gamma)w$.*

Proof. If $\eta\beta < \kappa$ then *Stay* strictly dominates *Protest* and hence p must be zero. If $c < (\alpha + \tau - 1)w$ then $e = 1$ and $\pi = \tau\gamma w$. So the government chooses $c > (\alpha + \tau - 1)w$ such that the strategic citizen chooses *Stay* ($e = p = 0$) and gets $\pi = \tau(1 + \gamma)w > \tau\gamma w$. □

If *Protest* is never the citizen's best choice, keeping the citizen in the country is always optimal for the government.

An example where emigration is almost impossible and revolutionary activities are savagely suppressed is China from 1949 to late 1970s. Although in this period α is at its peak, citizens being unable to apply for a passport can be interpreted as c approaching infinity. Other examples include North Korea and the Eastern Bloc. State censorship and restrictions on emigration are at their highest levels. It is almost impossible for citizens to protest or to emigrate.

The non-generic case of $\eta\beta = \kappa$ is omitted throughout the paper.

5 Benchmark II: The Government Chooses τ

Consider another benchmark model where the emigration cost c is fixed and the tax rate $\tau \in [0, \hat{\tau}]$ is chosen by the government, where $\hat{\tau} \in (0, 1)$ represents the upper bound of the government's taxing ability.

Proposition 3. *If $\eta\beta > \kappa$ and $\hat{\tau} > \max\{1 - \alpha + \frac{c+\eta\beta-\kappa}{w}, (1 - \eta)\frac{1+\gamma}{\gamma}(1 - \alpha + \frac{c+\eta\beta-\kappa}{w}) - \frac{\eta L}{\gamma w}\}$, the government chooses $\tau = \hat{\tau}$ such that $e = 1$ and $\pi = \hat{\tau}\gamma w$.*

If $\eta\beta > \kappa$ *and* $\hat{\tau} < 1 - \alpha + \frac{c+\eta\beta-\kappa}{w}$*, the government chooses* $\tau = \hat{\tau}$ *such that* $p = 1$ *and* $\pi = (1-\eta)\hat{\tau}(1+\gamma)w - \eta L$*.*

If $\eta\beta > \kappa$ *and if* $1 - \alpha + \frac{c+\eta\beta-\kappa}{w} < \hat{\tau} < (1-\eta)\frac{1+\gamma}{\gamma}(1 - \alpha + \frac{c+\eta\beta-\kappa}{w}) - \frac{\eta L}{\gamma w}$ *the government chooses* $\tau = 1 - \alpha + \frac{c+\eta\beta-\kappa}{w}$ *such that* $p = 1$ *and* $\pi = (1-\eta)(1+\gamma)\left((1-\alpha)w + c + \eta\beta - \kappa\right) - \eta L$*.*

Proof. If $\eta\beta > \kappa$ then *Protest* strictly dominates *Stay* and hence $1 - e - p$ must be zero. If $\tau \leq 1 - \alpha + \frac{c+\eta\beta-\kappa}{w}$ then $p = 1$ is an equilibrium and $\pi = (1-\eta)\tau(1+\gamma)w - \eta L$. If $\tau \geq 1 - \alpha + \frac{c+\eta\beta-\kappa}{w}$ then $e = 1$ is an equilibrium and $\pi = \tau\gamma w$.

The discussion is further divided into two cases because of the existence of the upper bound on τ:

- If $\hat{\tau} < 1 - \alpha + \frac{c+\eta\beta-\kappa}{w}$ then $e = 1$ can never be implemented. Hence $\tau = \hat{\tau}$ is optimal and $p = 1$, $\pi = (1-\eta)\hat{\tau}(1+\gamma)w - \eta L$ in equilibrium.

- If $\hat{\tau} > 1 - \alpha + \frac{c+\eta\beta-\kappa}{w}$ then the government gets at most $(1-\eta)(1+\gamma)\left((1-\alpha)w + c + \eta\beta - \kappa\right) - \eta L$ by choosing $\tau = 1 - \alpha + \frac{c+\eta\beta-\kappa}{w}$, and at most $\hat{\tau}\gamma w$ by choosing $\tau = \hat{\tau}$.

  Therefore, if $\hat{\tau} > \max\{1 - \alpha + \frac{c+\eta\beta-\kappa}{w}, (1-\eta)\frac{1+\gamma}{\gamma}(1 - \alpha + \frac{c+\eta\beta-\kappa}{w}) - \frac{\eta L}{\gamma w}\}$, $\tau = \hat{\tau}$ is optimal for the government and $e = 1$, $\pi = \hat{\tau}\gamma w$ in equilibrium; If $1 - \alpha + \frac{c+\eta\beta-\kappa}{w} < \hat{\tau} < (1-\eta)\frac{1+\gamma}{\gamma}(1 - \alpha + \frac{c+\eta\beta-\kappa}{w}) - \frac{\eta L}{\gamma w}$ then $\tau = 1 - \alpha + \frac{c+\eta\beta-\kappa}{w}$ is optimal for the government and $p = 1$, $\pi = (1-\eta)(1+\gamma)\left((1-\alpha)w + c + \eta\beta - \kappa\right) - \eta L$ in equilibrium.

□

If *Stay* is never the citizen's best choice and emigration is profitable enough for the strategic citizen (i.e. if α and w are big enough and/or c is small enough), the government uses a high tax rate to force the strategic citizen out of the country.

Proposition 4. *If $\eta\beta < \kappa$ the government chooses any $c > (\alpha + \tau - 1)w$ such that $e = p = 0$ and $\pi = \tau(1 + \gamma)w$.*

Proof. If $\eta\beta < \kappa$ then *Stay* strictly dominates *Protest* and hence p must be zero. If $\tau \geq 1 - \alpha + \frac{c}{w}$ then $e = 1$ is an equilibrium and $\pi = \tau\gamma w$. If $\tau \leq 1 - \alpha + \frac{c}{w}$ then $e = p = 0$ is an equilibrium and $\pi = \tau(1 + \gamma)w$. The optimal choice of τ depends on the value of $\hat{\tau}$:

- If $\hat{\tau} \geq (1 + \gamma)(1 - \alpha + \frac{c}{w})$ then $\tau = \hat{\tau}$ is optimal and in equilibrium $e = 1$ and $\pi = \hat{\tau}\gamma w$.
- If $1 - \alpha + \frac{c}{w} < \hat{\tau} < (1 + \gamma)(1 - \alpha + \frac{c}{w})$ then $\tau = 1 - \alpha + \frac{c}{w}$ is optimal and in equilibrium $e = p = 0$ and $\pi = (1 - \alpha)w + c)(1 + \gamma)$.
- If $\hat{\tau} < 1 - \alpha + \frac{c}{w}$ then $\tau = \hat{\tau}$ is optimal and in equilibrium $e = p = 0$ and $\pi = \hat{\tau}(1 + \gamma)w$.

□

If *Protest* is never the citizen's best choice, the government either chooses a small enough τ and collects tax from all citizens, or a big enough τ and collects tax only from non-strategic citizens. Making the strategic citizen leave is optimal if $\hat{\tau}$ is big enough and/or γ is small enough.

6 Main Model: The Government Chooses (c, τ)

Now assume the government can choose both the tax rate $\tau \in [0, \hat{\tau}]$ and the emigration cost c, where $\hat{\tau} \in (0, 1)$ is the upper bound of the government's taxing ability.

Proposition 5. *If $\eta\beta > \kappa$ and $(1 - \eta(1 + \gamma))\hat{\tau}w \leq \eta L$ the government chooses any $(c, \hat{\tau})$ that satisfies $c < (\alpha + \hat{\tau} - 1)w + \kappa - \eta\beta$. In equilibrium $e = 1$ and $\pi = \hat{\tau}\gamma w$.*

If $\eta\beta > \kappa$ *and* $(1-\eta(1+\gamma))\hat{\tau}w \geq \eta L$ *the government chooses* $(c, \hat{\tau})$ *with* $c > (\alpha+\hat{\tau}-1)w+\kappa-\eta\beta$. *In equilibrium* $p = 1$ *and* $\pi = (1-\eta)\hat{\tau}(1+\gamma)w - \eta L$.

Proof. If $\eta\beta > \kappa$ then *Protest* strictly dominates *Stay* and hence $1-e-p$ must be zero. If $c > (\alpha+\tau-1)w+\kappa-\eta\beta$ then $p = 1$ and $\pi = (1-\eta)\tau(1+\gamma)w - \eta L \leq (1-\eta)\hat{\tau}(1+\gamma)w - \eta L$, with equality if and only if $\tau = \hat{\tau}$. If $c < (\alpha+\tau-1)w+\kappa-\eta\beta$ the citizen chooses $e = 1$ and then $\pi = \tau\gamma w \leq \hat{\tau}\gamma w$ with equality if and only if $\tau = \hat{\tau}$.

Therefore, a small c is optimal for the government if $(1-\eta)\hat{\tau}(1+\gamma)w - \eta L \leq \hat{\tau}\gamma w$, which is equivalent to $(1-\eta(1+\gamma))\hat{\tau}w \leq \eta L$. However, if $(1-\eta(1+\gamma))\hat{\tau}w \geq \eta L$, it is optimal for the government to choose $(c, \hat{\tau})$ with $c > (\alpha+\hat{\tau}-1)w+\kappa-\eta\beta$. □

The intuition is the same as in the first benchmark model. If *Stay* is never the citizen's best choice and the disutility of losing office is big enough ($(1-\eta)\hat{\tau}w \leq \eta L$) the government prefers to make the strategic citizen leave the country. Also observe that whenever the choice of tax rate is relevant, the government should choose the highest tax rate possible, $\hat{\tau}$. This is because the "cost" of increasing tax rate (providing the citizen a stronger incentive to emigrate) can be eliminated by increasing the emigration cost accordingly. A higher emigration cost does not affect the government's payoff directly but a higher tax rate does. So the tax rate is a better tool than the emigration cost for the government to manipulate the citizen's choice.

Proposition 6. *If* $\eta\beta < \kappa$ *the government chooses* $(c, \hat{\tau})$ *with* $c > (\alpha+\hat{\tau}-1)w$ *such that* $e = p = 0$ *and* $\pi = \hat{\tau}w$.

Proof. If $\eta\beta < \kappa$ then *Stay* strictly dominates *Protest* and hence p must be zero. If $c < (\alpha+\tau-1)w$ then $e = 1$ and $\pi = 0$. So the government chooses

$c > (\alpha + \tau - 1)w$ such that the citizen chooses *Stay* ($e = p = 0$) and gets $\pi = \tau w$. In this case π is maximized when $\tau = \hat{\tau}$. □

If *Protest* is never the citizen's best choice, keeping the citizen in the country is a better choice for the government. Also the government should choose the highest tax rate possible for the same reason as above.

7 Concluding Remarks

In this model people take into consideration their income levels in the home country and overseas as well as the result of the protest against the government when making emigration decisions. The government, the game designer who determines the emigration cost and/or the tax rate, then faces the balance of stability and economic performance: If the emigration is an attractive option for the strategic citizen then it is more likely that the autocrat can remain in power but the GDP is low; Otherwise, the GDP is high but it is more likely that the autocrat loses office.

With other parameters fixed, when *Protest* dominates *Stay* for the citizen and when the government is not able to extract very much from the citizens ($\hat{\tau}$ is small) while losing office is fatal to the incumbent party (L is large), the government wants to open the floodgates to avoid the risk of losing office since losing GDP has little impact on the amount of tax it can collect; In contrast, when the government is able to take away a big fraction of the GDP ($\hat{\tau}$ is big) and the loss L is small, the government wants all citizens to stay in the country, even though they are going to protest, because losing the GDP is too costly while losing office is bearable.

This model can also be extended to allow the government to choose κ, the up front cost of participating the protest. But choosing a bigger κ should be

costly for the government, otherwise the government can prevent the protest from happening at no cost.

References:

Bai, Y., & Jia, R. (2016). Elite recruitment and political stability: The impact of the abolition of china's civil service exam. *Econometrica*, *84*(2), 677–733.

Boubakri, H. (2013). Revolution and international migration in tunisia. *MPC Research Report No. 4*.

Bueno De Mesquita, E. (2010). Regime change and revolutionary entrepreneurs. *American Political Science Review*, *104*(3), 446–466.

Cha, V. (2012). *The impossible state: North korea, past and future*. Random House.

Fargues, P. (2017). Mass migration and uprisings in arab countries: An analytical framework. *International Development Policy| Revue internationale de politique de développement*, *7*(7).

Hirschman, A. O. (1970). *Exit, voice, and loyalty: Responses to decline in firms, organizations, and states* (Vol. 25). Harvard university press.

Huang, H. (2015). Propaganda as signaling. *Comparative Politics*, *47*(4), 419–444.

Huang, H. (2017). Who wants to leave china? *Journal of East Asian Studies*, *17*(2), 191–213.

Hurun, I. (2016). Hurun report: Chinese investment immigration white paper 2016.

Meirowitz, A., & Tucker, J. A. (2013). People power or a one-shot deal? a dynamic model of protest. *American Journal of Political Science*, *57*(2), 478–490.

Morris, S., & Shin, H. S. (2001). Global games: Theory and applications.

Sellars, E. A. (2013). Does emigration inhibit reform? evidence from the mexican agrarian movement, 1910-1945.

Sellars, E. A. (2019). Emigration and collective action. *The Journal of Politics*, *Forthcoming*.

Xiang, B. (2016). *Emigration trends and policies in china: Movement of the wealthy and highly skilled*. Migration Policy Institute, Transatlantic Council on Migration.