

Are government ministers in Papua New Guinea more likely to be re-elected?

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Research question(s)

- Are government ministers in PNG more likely to be re-elected in national elections?
- If so, how much of an advantage it is to be a minister? Does that advantage vary over time, elections, seats?

Importance of ministries in PNG

- Macro political level: ministries used to incentivise MP support for government and prime minister (Laveil 2023)
 - Many parties and independents + frequent votes of no confidence (VONC) → need to build coalitions to form government (Ivarature 2022)
- Micro level: being a minister could be both help and hindrance for re-election prospects
 - Resources from ministry, ability to grant contracts etc
 - National influence/reputation
 - Additional public scrutiny
 - Greater expectations from supporters
- Together: strong focus on ministries amongst politicians and analysts

Preview of key findings

1. **Open electorates:** being a minister **increases** the likelihood that an MP is re-elected by **14.4 percentage points**, in the election immediately after they become a minister
 - Even if an MP continues as a minister for 2+ consecutive terms, they only receive this electoral boost in the first election after being appointed; being a minister doesn't appear to matter after that
2. **Provincial seats:** being a minister provides no electoral advantage for incumbents standing for re-election

Contribution of this study

1. Expands and improves empirical evidence on PNG politics + ministerial incumency effects
 - First study to examine causal (not correlative) effect of being a minister on political success in PNG
 - Uses modern event study/difference-in-differences techniques
2. Shows benefits of being a minister are not uniform across PNG: effects depend on what kind of seat an MP runs in and how long an MP is a minister for

Outline

Introduction

PNG politics

Data and variables

Empirical strategy

Results

Robustness checks

Conclusion

PNG politics

- Open vs provincial seats
 - Provincial governors must vacate the office of governor if appointed as a minister:
Organic Law on Provincial Governments and Local-level Governments 1998 s 19(1)(b)(i)
- Clientelism: 2 key elements ([Wood 2018](#))
 1. Contingent exchange: voter support (often) depends on receiving material benefits
 2. Particularism: only supporters receive these benefits (not the whole district or electorate)
- Fragmentation (many parties/independents) + instability (VONC etc)

Ministries

- Who gets appointed and why?
 - Larger parties → more ministerial positions ([Laveil 2023](#) and [Winn 2022](#))
 - Positions allocated based on influence of parties in govt
- Maximum number set by PNG's constitution and the *Organic Law on the Number of Ministers*
 - Growing over time: from 28 (1977-2010), to 32 (2010-2023), and now 38 (Oct 2023)
 - Large number of ministers per term due to frequent cabinet reshuffles ([Laveil 2022](#))
 - On average 58% of MPs became ministers in a given parliamentary term between 1977 and 2017

Data

- Election results: [PNG Elections Database \(Wood 2019\)](#)
 - Whether an **incumbent** MP is re-elected at the election following their term in parliament
- Ministerial tenure: [Ivarature \(2022\)](#)
 - When an MP was a minister (for how long and on what dates) and what portfolio they held

Data

- Election data excluded from the analysis:
 - All observations from the 1972 and 2022 elections (focus is on elections after PNG's independence + full data not available for 2022)
 - 15 observations of seats where elections failed per the PNG Electoral Commission
 - 39 observations of seats where data was incomplete
- Final sample: 1248 observations total

Outcome variable

- Key outcome: whether an incumbent MP (minister or not) is re-elected at the election following their term in parliament
- Mathematically: does an MP that runs for re-election at time t win or lose, after being previously elected at time $t - 1$?
 - t is measured in 5-year blocks representing election cycles

Treatment (and control) groups

- **Treatment:** MP is appointed as a minister during a parliamentary term for any duration of time, before seeking re-election at the next election
- **Control:** MP is *not* appointed as a minister during a parliamentary term for any duration of time, before seeking re-election at the next election
 - Note this means the control group is the 'not-yet' treated group.
- Mathematically:
 - An MP is 'treated' if she was elected at time $t - 1$, ran for re-election at time t , and was a minister between time $t - 1$ and t .
 - All other MPs are in the control group.

Treatment assignment

A few things to note re treatment assignment:

1. Treatment assignment is thought to depend largely on party size and importance in government + max no. of ministers is set by the law
2. Treatment status can change: an MP might be a minister in one term, and not a minister the next – or vice versa
3. Some ministerial offices may be more useful than others for re-election
 - E.g. being the PM, Treasurer, etc (Filer et al. 2021)
4. Duration and timing of ministerial tenure during a parliamentary term may matter for re-election
 - I can't test for the effects of duration, but do check effects of timing

Example

- Dame Carol Kidu was first elected in 1997, and then was re-elected in 2002 and 2007. She did not contest in the 2012 election.
 - We are interested in Dame Kidu's performance in the 2002 and 2007 elections.
- Dame Carol Kidu was appointed as a minister in the 2002-7 and 2007-12 parliamentary terms.
 - Dame Kidu is considered part of the 'control group' in the 2002 election (as she was not a minister in the term before this election) and part of the 'treatment group' in the 2007 election.

Treatment and control observations

Table 1. Treatment and control observations

	Treatment	Control	Total
MP wins	186	238	424
MP loses	204	620	824
Total	390	858	1248

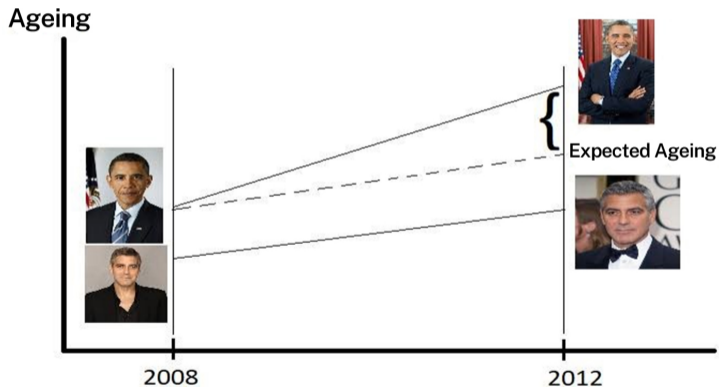
Summary statistics

Table 2. Summary statistics

	Observations	Mean	Standard deviation	Min	Max
MP wins or loses	1248	0.660	0.474	0	1
Treatment status (0=MP is not a minister, 1=MP is a minister)	1248	0.312	0.464	0	1

Difference-in-differences (DID) approach

- A simple example: what is the impact of being the US president on ageing?



DID identifying assumptions

2 key assumptions:

1. Parallel trends

- Backbenchers and ministers should face the same level of difficulty over time in getting re-elected, apart from the potential advantage of being a minister
- Allows for differences between backbenchers and ministers that remain consistent over time (e.g. even if MPs who become ministers are inherently more charismatic or are born with better leadership skills than backbenchers)

Identifying assumptions - parallel trends

Reasons the parallel trends assumption is likely to hold:

1. Local nature of politics in PNG
 - All MPs, ministers or otherwise, must campaign vigorously at the local level given PNG's clientelist political environment
2. Constituent development funds (DSIP and PSIP)
 - Backbenchers and ministers alike are on a relatively even playing field in terms of resources (apart from being a minister)

DID identifying assumptions

2 key assumptions:

2. No anticipation effects

- No treatment effects observed before treatment begins (e.g. no increase in re-election odds before actually becoming a minister)

Identifying assumptions - no anticipatory effects

1. MPs cannot know with certainty before running for re-election that they will be made a minister in future
 - Appointments are made based on factors largely exogenous to individual MPs ([Laveil 2023](#))
2. Even if an MP did know they would become a minister, no additional resources could be accessed before appointment, and the reputational benefit of claiming that one will become a minister is likely to be limited (hard to verify if claim will become true or not)

Specification

$$Y_{it} = \beta_0 + \sum_{e=-K}^{-2} \delta_e T_{it}^e + \sum_{e=0}^L \tau_e T_{it}^e + \phi_i + \nu_i + \mu_i$$

- Y is whether MP i is re-elected at time t , where t is indexed according to the first election in which the MP runs as an incumbent;
- T is a dummy that indicates whether MP i was treated at time t (i.e. was a minister between time t and $t - 1$);
- ϕ and ν are election and MP fixed effects respectively;
- μ is the error term;
- Values of e between $-K$ and -2 indicate the number of elections before an MP becomes a minister; $e = -1$ is the base election against which effects are compared, i.e. the last election that an MP wins prior to becoming a minister. $e = 0$ is the first election where an MP is treated and values of e that are greater than zero but less than L represent the number of elections after treatment began;
- β_0 is the intercept; δ_e and τ_e are the dynamic treatment effects to be estimated.

Estimator

To estimate the causal effect of being a minister on chances of re-election, I use the estimator from [de Chaisemartin and D'Haultfoeuille](#) ('DCDH' [2022a](#) and [2022b](#))

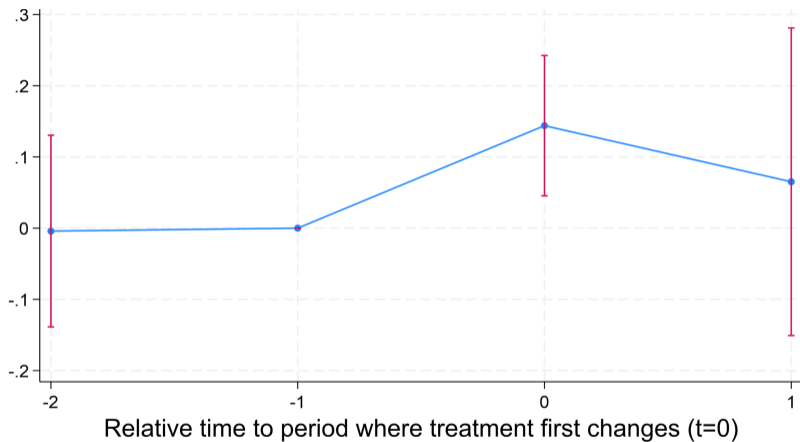
- The DCDH estimator gives the average treatment effect on the treated - i.e. average effect of being a minister for those who become ministers
- Has a few other advantages:
 - Avoids the 'negative weights' problem that occurs when using two-way fixed effects models when treatment time is staggered
 - Can account for treatment 'turning on and off' - e.g. an MP is a minister in one term, and not a minister in the next
 - Allows use of unbalanced panel - means I can use all possible observations of MPs

Open electorate results

In open electorates:

- Being a minister **increases** the chance of an MP being re-elected by **14.4 percentage points** in the first election after they are made a minister
- This effect dissipates by the time the next (second) election occurs, even if the MP is still a minister - though the estimate is less precise for this period

Event study plot



Results table

Table 3. Impact of being a minister on re-election

	(1) Open seats only
Lead 2	-0.004 (0.069)
Lead 1 (baseline)	0
Lag 0	0.144*** (0.050)
Lag 1	0.065 (0.110)
Overall ATT	0.132** (0.059)
Pre-trends p-value	0.953

Standard errors are clustered at the MP level.

***, ** and * denote statistical significance at the 1, 5 and 10 percent levels respectively.

Why is the effect transitory?

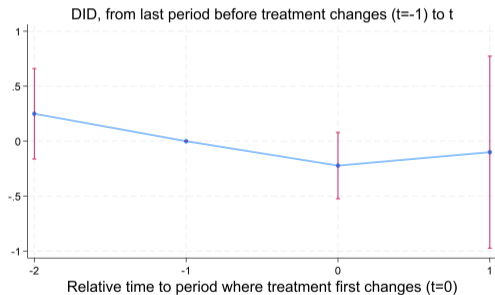
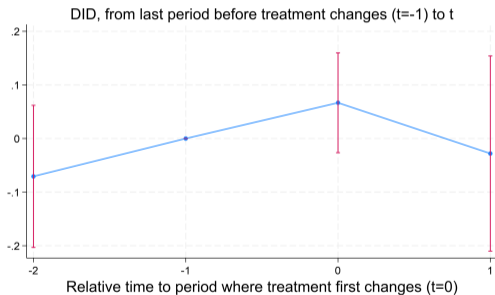
1. Supporters' expectations may change (increase) over time
 - Channelling same amount of resources from a ministry may provide less electoral benefit over time
2. Reputational effects may reduce over time
 - Supporters may get used to an MP's status as minister
3. Accountability
 - Being a minister (for longer) may invite greater scrutiny on an MP's performance
4. Being a minister (for longer) may draw an MP's attention towards national policy and politics at the expense of local issues
 - Voters may penalise this kind of behaviour in a clientelist environment

Provincial seats

- In provincial seats, there is no change in an MP's chances of being re-elected in any election after being made a minister
- Effect is statistically insignificant in all periods
 - This is the case when looking at 1) a sample with open + provincial seats and 2) provincial seats only - though this is less precisely estimated

Event study plots

Left: all seats (open + provincial). Right: provincial seats only.



Results table

Table 4. Impact of being a minister on re-election
Different types of electorates

	(2)	(3)	(1)
	All seats	Provincial seats only	Open seats only
Lead 2	-0.071 (0.068)	0.250 (0.210)	-0.004 (0.069)
Lead 1 (baseline)	0	0	0
Lag 0	0.067 (0.047)	-0.222 (0.154)	0.144*** (0.050)
Lag 1	-0.028 (0.093)	-0.100 (0.446)	0.065 (0.110)
Overall ATT	0.042 (0.068)	-0.214 (0.164)	0.132** (0.059)
Pre-trends p-value	0.296	0.233	0.953

Standard errors are clustered at the MP level.

***, ** and * denote statistical significance at the 1, 5 and 10 percent levels respectively.

Why no ministerial advantage in provincial seats?

Recall: provincial governors who are made ministers must vacate the office of governor, per *Organic Law on Provincial Governments and Local-level Governments (1998)*, section 19(1)(b)(i)

- This affects the net benefit of becoming a minister for parliamentarians in provincial seats
- Losing benefits of being governor (chairing Provincial Assembly, sitting on influential local government planning and budget committees up until 2014) may not be outweighed by benefits of being a minister

Suggests that some measures to constrain the power of executive government (like this law) can be effective?

Timing of holding ministerial office

Does it matter whether you are a minister at the **end** of a parliamentary term, vs if you are a minister **earlier** in the term?

- Potential recency bias in supporters' minds if one is a minister at end of a term

To investigate this, I divide the treatment group in the open electorate sample into two portions:

1. Ministers who hold office at the end of a parliamentary term (188 obs)
2. Those who were ministers during a term but did not hold office at that term's conclusion (202 obs)

Note: the control group now becomes the 'never-treated' group, rather than the larger 'not-yet' treated group used in the rest of the analysis.

Timing of holding ministerial office - results

Being a minister at any point of a parliamentary term, earlier or later, improves an MP's chances of re-election at the next election by virtually the same amount:

- For MPs who are ministers at the **end of a term**: 12.8 percentage points
- For MPs who are ministers at **any other time during a term**: 12.9 percentage points

Note that the ministerial advantage still fades after that first election.

Results table

Table 5. Impact of being a minister on re-election timing of holding ministerial office

	(13)	(14)
	Minister at end of a term	Minister earlier in a term
Lead 2	0.083 (0.129)	-0.130 (0.096)
Lead 1 (baseline)	0	0
Lag 0	0.128* (0.069)	0.129** (0.062)
Lag 1	0.187 (0.154)	-0.230 (0.151)
Overall ATT	0.158** (0.075)	0.055 (0.071)
Pre-trends p-value	0.522	0.174

Standard errors are clustered at the MP level.

***, ** and * denote statistical significance at the 1, 5 and 10 percent levels respectively.

Robustness checks

- **Q:** What if the effect is driven only by 'atypical' observations (urban electorates, prime ministers)?
 - **A:** Being a minister still gives an electoral advantage even when urban seats and PMs are excluded
- **Q:** Do results stay the same if I change the model specification (add covariates, use a different estimator)?
 - **A:** Largely yes

Robustness checks

Table 6. Impact of being a minister on re-election
Various alternate samples, specifications and estimators

	(2) Open rural seats only	(3) Excluding prime ministers, open seats only	(4) With covariates, open rural seats only	(5) Wooldridge estimator
Lead 2	-0.035 (0.072)	-0.004 (0.076)	-0.022 (0.076)	
Lead 1 (baseline)	0	0	0	
Lag 0	0.147*** (0.050)	0.131** (0.052)	0.127** (0.056)	
Lag 1	0.054 (0.114)	0.062 (0.111)	0.039 (0.110)	
Overall ATT	0.131** (0.061)	0.122** (0.052)	0.110** (0.063)	0.183** (0.099)
Pre-trends p-value	0.633	0.957	0.773	

Standard errors are clustered at the MP level.

***, ** and * denote statistical significance at the 1, 5 and 10 percent levels respectively.

Conclusion

- Being a minister makes it 14.4 percentage points more likely that an MP in an open electorate is re-elected in the election immediately after they become a minister
 - This effect dissipates by the following (second) election after being a minister
 - Effect is detected even when urban seats and PMs are excluded
- No electoral benefit detected for ministers contesting in provincial seats at any point in time
- Some caveats:
 - Analysis is restricted to short-run effects due to data availability
 - Limited longer-run effects computed are less precisely estimated
- Confirms the commonly held belief by PNG analysts and politicians re importance of ministerial positions at the micro-political level - but shows that the effect is not uniform across time and seats in PNG

Thank you!