## Budget Argument Mining Dataset Using Japanese Minutes from the National Diet and Local Assemblies

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## Purpose

- We attempt to develop a system that allows us to easily understand the background of a budget and the discussions that lead to the final budget of the national and local governments.
- Here, we design a budget argument mining task that identifies and links budget items and corresponding discussions in the minutes, which are made public by the national and local governments,

## The following are the four contributions of this study.

- We propose a task to link a budget item to the related argumentative component in different language resources (minutes and budget information).
- We proceed the next higher data structure analysis by utilizing previous research. In this research, we automatically identify argumentative components, which includes MONEY expressions using NER.
- We unify data formats among multiple local governments (Otaru City, Ibaraki Prefecture and Fukuoka City).
- We develop a budget argument mining dataset, organize the shared task, and publish the dataset. https://github.com/poliinfo3/PoliInfo3-FormalRun-BudgetArgumentMining

Annotation **Budget Information** Next, let's move on to the third question. paymentRelated 46,700 thousand expenses No. 15. Senator Hamamoto. - · 46.7 million yen Input Now, I would like to ask you about the third item, the budget for the new fiscal year budgetId ID-2019-012033-00-000113 1. Budget Information and major businesses. The general account budget for fiscal 2019 is organized at Premise: Future (... budgetTitle 2019 initial budget plan approximately 57,201,300,000 ven, which is the same amount as revenue and 2. Minutes Promotion of hometown tax expenditure . First of all, please tell us about the differences from the former payment, other major (1) National Diet □ ID-2019-012033-00-000 mayor regarding the basic idea of formulating a budget for the new fiscal year. businesses Next, please tell us about the budget for the new fiscal year, revenue and (2) Local Assembly Finance Department expenditure, compared with the initial budget for this year and the final Output supplementary budget for this year, and why. Regarding city tax, it is said that budgetLastYea property tax and city planning tax are expected to increase significantly, but I 1. Argument Classification Hometown tax navmentAs a thank-you to the donors under understand that this is probably due to the regeneration of largé commercial 2. Related IDs Linking the system, we will donate facilities in the city. We are pleased to see an increase in sales, but on the other special products hand, unfortunately, a decrease in sales is expected for personal municipal tax and corporate municipal tax. Please tell us about the factors behind this decrease in sales and the amount. Next, 46.7 million yen has been recorded for hometown

Table 2: Data format for National Diet minutes

Field name	Example
speechID	"T120105261X02520200608_002"
speechOrder	2
speaker	"麻生" (Chinese character)
speakerYomi	"あそう" (Japanese cursive syllabary
speakerGroup	"Liberal Democratic Party"
speakerPosition	"Minister of Finance"
speakerRole	null
startPage	1
createTime	"2020-06-23 20:41:47"
updateTime	"2020-06-24 10:24:07"
speechURL	"https kokkai.ndl.go.jp"
speech	"The supplementary budget for "
moneyExpressions	
<sup>□</sup> moneyExpression	"459 billion yen"
└ relatedID	"R2-MHLW-BUDGET-02"
□ argumentClass	"Premise"

Table 3: Data format for local assembly minutes

tax-related expenses. Please tell us about this breakdown. Also, please tell us

Field name	Example
date	"2019-02-20"
localGovernmentCode	"011002"
localGovernmentName	"Otaru"
proceedingTitle	"First regular meeting"
url	"https://www "
proceeding	
└ speakerPosition	"Chair"
└ speaker	"Suzuki"
└ utterance	"I admitted that"
<sup> ∟</sup> moneyExpressions	
└ moneyExpression	"46.8 million yen"
└ relatedID	"ID-2019-012033-00-000001"
☐ argumentClass	"Premise"

Table 1: Data format of budget information

Field name	Example
budgetId	"ID-2019-012033-00-000001"
budgetTitle	"Initial Budget Proposal"
typesOfAccount	"Childcare services"
department	"Social Welfare Department"
url	"https://www.city.otaru.lg.jp"
budgetItem	"Childcare centers in the city"
categories	"Children and child-rearing"
budget	"4,275 thousand yen"
budgetLastYear	null
description	"Activities to raise children in the"
budgetDifference	null

The seven argument classes are:

- 1. Premise: Past and Decisions
- 2. Premise: Current and Future / Estimates
- 3. Premise: Other 4. Claim: Opinions, suggestions, and questions
- 5. Claim: Other
- 6. It is NOT a monetary expression.
- 7. Other

An example of Premise: Past

In terms of the amount reflected in the taxation for the fiscal year 2018, it is approximately 45 million ven.

- An example of Premise: Future

The hometown tax-related expenses are estimated to be 46.7 million ven.

An example of Premise: Other

Generally, the national model household for the levy limit, in terms of income, is even with pension 10 million yen.

An example of Claim: Opinion

Free outpatient care at hospitals will support child-rearing.

An example of Not a monetary expression -

However, the entire City of Otaru now has only 180,000 cubic meters, so ...

Table 5: Number of argumentClasses and relatedIDs in Training dataset

		argumentClass								relatedID	
Year National/local		Premise			Claim		Other	Not	Total	Non-empty	Count
	government	Future	Past	Other	Opinion	Other	Other	Money	Total	Non-empty	Count
	Otaru City	23	84	15	18	0	0	4	144	31	38
2019	Ibaraki prefecture	26	80	39	0	0	0	2	147	5	13
	Fukuoka City	63	138	40	29	12	3	9	294	211	286
2020	National Diet	45	92	14	10	0	0	4	165	11	13
	Otaru City	4	55	9	16	0	0	1	85	16	17
	Ibaraki prefecture	21	70	31	3	0	0	4	129	12	12
	Fukuoka City	78	103	64	22	-11	3	3	284	64	83
	Total	260	622	212	98	23	6	27	1,248	350	462

Table 6: Number of argumentClasses and relatedIDs in Test dataset

		argumentClass							relatedID		
Year	National/local	Premise			Claim		Other	Not	Total	Non-empty	Count
	government	Future	Past	Other	Opinion	Other	Other	Money	Total	Non-empty	Count
2019	Otaru City	43	74	49	9	2	1	12	190	18	20
	Ibaraki prefecture	5	3	25	1	0	0	0	34	1	1
	Fukuoka City	8	13	13	1	2	0	3	40	3	3
2020	National Diet	- 11	25	4	21	0	0	4	65	1	- 1
	Otaru City	31	53	25	9	0	1	4	123	21	26
	Ibaraki prefecture	2	8	21	0	0	0	3	34	2	2
	Fukuoka City	1	20	8	1	0	0	4	34	1	5
	Total	101	196	145	42	4	2	30	520	47	58