Vote Trading in the Making of a Semi-Presidential Constitution: Evidence from Taiwan

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Abstract

Semi-presidentialism is different from the other constitutional systems by the various ways to arrange the bilateral relationship between the constitutional agencies. Ideally, a constitution should match power and accountability, but semi-presidentialism can be hindered from fulfilling this goal if it results from vote trading. This paper demonstrates by a non-cooperative game theory that vote trading can be provoked if no pivot finds the status quo his/her best or second-best choice, and this probability increases with the threshold of decision-making. Taiwan, in which constitutional reform must be approved by a qualified majority rule, is a good case to validate this proposition. A comparison between the partisan stances and the compromised amendments—a president who can singlehandedly appoint the premier but not allowed to dissolve the parliament actively—suggests that power and accountability are mismatched. Most likely, vote trading is the explanation for the making of Taiwan's peculiar semi-presidential constitution.

1. Introduction

Constitutions arrange the power relationship among the top office holders and impose accountability on them by the mandate they receive. By this logic, the premier in a parliamentary democracy depends on the legislative confidence to survive but can dissolve the parliament to make voters the ultimate arbitrator; the president and the legislature in a presidential system are both veto players in policymaking but cannot terminate the term of each other because both are elected by the people (Lijphart 1999: 117; Tsebelis 2002: 76-90). Most complicated is the semi-presidential system, now a popular form of government (Samuels and Shugart 2010: 32-34), in which a directly elected president appoints a premier responsible to the parliament.[1] Various types of semi-presidentialism may shape the triangular relationship among the president, the premier, and the parliament in entirely different ways.[2]

Power tends to match accountability if the designers of semi-presidential system have a consistent plan to make the constitution work. In reality, constitution making usually involves the participation of multiple agents endowed with divergent issue stances. Constitutions are made or amended by voting, just like policymaking in most decision-making body. We learn from existing literature that vote trading—a voter endorsing an issue position that favors the other voters in exchange of a better outcome—is a common practice, which can be extended to constitution making.[3] A critical question is whether vote trading in the making of a semi-presidential constitution will create unwanted outcomes.

Since constitution making sets up the basic law of a country, this paper will discuss vote trading by a non-cooperative game to highlight the enforceability problem. Our analysis wil show that, as long as the failure to reach a new consensus will keep the status quo intact, vote trading is possible even if preferences are separable and different kinds of majority rules are used. The following section will discuss existing studies and explain why vote trading is an essential topic. Section three will present a model of vote trading and derive the main hypotheses. Section four will explain why Taiwan's semi-presidential system fits the model, followed by a section verifying the hypotheses by tracing the process of Taiwan's constitution reform.

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[1] This is the broadest definition of semi-presidentialism. For further discussions, see Duverger (1980) and Elgie and Moestrup (2007).

[2] While power relationships in parliamentarism and presidentialism (especially the unicameral ones) are bilateral and straightforward, those in semi-presidentialism are trilateral and variant, such as the different arrangements of the president's powers in the appointment of the premier, the dissolution of the parliament, the chairmanship of the cabinet meeting, and the vetoing of legislations. For the details of presidential powers in presidential and semi-presidential regimes, see Siaroff (2003).

[3] In this paper, vote trading is used interchangeably with logrolling, although the second term usually refers to actions taken by a decisive coalition while the first term does not entail this implication (Miller 1977: 53).

2. How to study constitutional choice?

Constitution is the common interest of several disciplines. Theories on the typology of constitutional systems are important but extraneous here because they typically care more about the consequences rather than the causes of the constitutions.[4] Constitutional studies is another popular approach yet the emphasis is mainly normative than empirical. For the empirical dimensions, historical studies tend to give a detailed account of what actually happened; in particular, historical institutionalism stresses not only the micro dynamics but also the macro transformations.[5] Nevertheless, the historical approach focuses more on unforeseen outcomes than on elite calculation. For an issue as important as constitution choice, some elites must have a clear picture of what they want and delivered this message to their counterparts. The problem is how the interaction affects their decision.

Vote trading is an important but understudied mechanism at the micro level. No decision-making body works without allowing its members to vote. When multiple issues are considered, vote trading becomes an attractive way for decision-makers to interact (Buchanan and Tullock 1962; Mueller ed. 1997). Vote trading can be traced to Arrow's theorem that strategic behavior cannot be avoided (Arrow 1951). Following this line, most public choice theories ask how vote trading shape the final decision. In particular, Schwartz (1977: 999) proves the theorem that when at least some of the issues can be decided independently and when there exists a feasible outcome not dominated by any other, then that outcome will automatically be chosen in the absence of vote trading. An implication of this statement is that if preferences cannot be measured independently, vote trading may happen and create an unstable decision.[6] This finding is important but leaves several questions unanswered.

First, vote trading requires the coordination between at least two voters. The cooperative game theory (CGT) is a natural tool to study the coalition problem.[7] However, CGT points out the conditions under which vote trading is possible but not about whether traders have the commitment to the deal they reached. In contrast, the equilibrium concept of the non-cooperative game theory (NCGT) is defined to handle the enforceability problem. We can compare NCGT and CGT and examine how well

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[4] To name some representative works on comparative constitutional systems: Goodin ed. (1996), Sartori (1997), Lijphart (1997), Tsebelis (2002), Samuels and Shugart (2010).

[5] These two parts can be complementary. If people choose from micro interactions a path toward cooperation, the increasing return can reinforce the constitutional culture of coordination (Pierson 2000). For works using historical institutionalism to study constitutional change, see Broschek (2010; 2011), Burnham (2011), Filippov and Shvetsova (1999), Immergut (2005), Jung and Deering (forthcoming), McFaul (1999), Pierson (1996), and Solum (2008).

[6] The formal definition of (non)separable preferences will be given later. See Lacy and Niou (2000) for the application of nonseparable preferences to electoral institutions.

[7] The solution concept of CGT is core, the set of imputations having a sum of payoffs no less than the value of any other coalition.

each theory captures vote trading in the real world.

Second, existing studies suggest that vote trading and vote cycles are deeply correlated.[8] A possible explanation is that vote trading implicitly assumes a simple majority rule: When multiple issues are considered together, vote cycling is quite common under the simple majority rule. If no result is stable, we have no need to be worried about the status quo, for it can be easily defeated. However, the same logic implies that the higher the threshold to pass a resolution the more difficult to change the status quo. The changeability of the status quo is thus an important issue under the qualified majority rule. This is also an issue of practical importance because constitution making usually involves multiple issues and qualified majority rule.

Third, Tullock (1959) and Riker and Brams (1973) have shown that vote trading may lead to Pareto inefficient outcomes, although Schwartz (1975) provides counter-examples. In any case, we are sure that vote trading may produce socially inferior results. Social optimality is an important issue for normative studies, for it underlies the potential drawbacks of a constitutional design. The findings of NCGT is yet to be explored.

These are all problems that a model of vote trading should take into account.[9] Furthermore, the following features should be considered if vote trading is to be applied to constitution making. First, it should treat normative concerns as the objective functions of the constitution makers. Second, it should examine how the variant rules of decision-making turn micro preferences into a collective choice. Third, the vote-trading model should gauge the enforceability problem missed by CGT. In particular, the model should conjecture whether a consensus of constitutional reform can be built when participants hold divergent goals. Another issue is the set of the bargaining result. If there are multiple alternatives, are the compromised amendments better than the others? NCGT meets most of these requirements. The next section will present the formal findings, followed by a justification of why Taiwan can corroborate this model.

3. When is vote trading possible?
NCGT treats collective choice as the explanandum of micro motives. Although CGT

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[8] To scholars believing that vote trading and vote cycling are logically equivalent, Bernholz (1975) provides counter-examples. Koehler (1975), however, presents an example to demonstrate that voter's paradox—the continuous replacement of a passed decision—is a sufficient condition for vote trading. For an empirical study on vote trading and cyclical majorities, see Stratmann (1996).

[9] Aside from a few exceptions, earlier studies on vote trading are largely theoretical. More recently some empirical works appeared, such as the distinction between self-interest and logrolling (Kau and Rubin 1979), vote trading in the revisions of the Farm Bill of the U.S. Congress (Stratmann 1992), vote trading and separable preferences in the decision-making of the European Union (Aksov 2012; Finke 2009; Finke and Fleig 2013), and the qualitative importance of vote trading to legislation (Stratmann 1995). However, rarely have these works used NCGT to derive their empirical hypotheses.

share the same purpose, its prediction can contradict that made by NCGT. A good example is the Prisoner's Dilemma. For CGT, "mutual defection" will not happen because it is Pareto dominated by "mutual cooperation"; for NCGT, "mutual defection" is the *only* equilibrium because "defection" is the strictly dominant strategy.[10] Indeed, whether the players are able to abide by the contract is the major difference between the two forms of game theory. We are curious whether they offer divergent views on vote trading.

As Schwartz (1977) points out, the preference structure exerts a strong impact on the likelihood of vote trading. The major concept is the separability of preferences. If the preference for an issue is independent from the preference for the other issues, the preference is separable; otherwise the preference is nonseparable. An interesting question is whether separable preferences can always prevent vote trading. Since the stability of the status quo is critical to the answer of this question, NCGT can be generalized to cover all kinds of situations.

To establish the relationship between separable preferences and vote trading, we assume that all elements in the issue-package can be compared and ranked. A decision "defeats" or "beats" another if, in contrast with the latter, the former makes no member worse off and improves the welfare of some. Options in the top rank are called the "best choice", the "second-best choice", etc. Note that the rank in an issue-package does not imply that all issues share the same rank. For instance, suppose a package includes issues I and II and the rank of the alternatives is (no, no), (yes, yes), (no, yes), and (yes, no). Then (no, no) is the best choice of the issue-package but issue II does not have a separable preference. Reversely, if preferences over every issue are separable, then the top choice of each issue is tantamount to the best choice of the issue-package. Another assumption is that participants of the constitutional reform are aware of the true preferences of each other but are uncertain of the final decision (see the appendix for the theorems of the vote-trading game). In the bargaining process, participants observe the proposals presented by the others, and the final decision depends on their coordination if several feasible equilibria emerge.

A resolution is made if two necessary conditions are satisfied: first, it brings a change in the status quo; second, it is made by a consensus of the supporters. Namely, the violation of the first condition will automatically keep the status quo intact. It follows that the inability to create a new resolution by consensus will preserve the status quo across all issues. Therefore, a successful reform means a change in at least one issue. To facilitate the description for the propositions, "the status quo" will stand

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[10] The solution concept in NCGT is Nash equilibrium, the strategy combinations in which no player can receive a higher payoff given the strategies chosen by the other players.

for the status quo across all issues, "no change" will designate the status quo in a particular issue, "sincere voting" will denote the choice of one's best choice, and "strategic voting" will indicate the choice of non-best alternatives. Proposition 1 specifies the conditions of vote trading, and proposition 2 states how the preference order of the status quo determines the likelihood of vote trading.

Proposition 1. If preferences are separable for every issue in the issue-package and players can reach an irreplaceable decision to replace the status quo, vote trading will not happen.

If each issue in the issue-package has a separable preference, the result built on the best choice of each issue is the best choice of the issue-package. Since no alternative can defeat this outcome, no group in the decision-making body can stick to any outcome that improves the payoff of its members. Since the best choice of the issue-package results from sincere voting of all voters, strategic voting will not happen. Accordingly, vote trading cannot change the result of best choice. If the stated conditions are satisfied, the best choice of the issue-package is in Nash equilibrium because no voter can increase his payoff by deviating from this result.

A logical implication of proposition 1 is that if vote trading takes place, the cause is either the nonseparable preferences or the instability of the best choice.[11] When preferences are separable, therefore, the question is how the bundle of best choices can be changed. With separable preferences, we cannot exclude the possibility that an alternative can defeat the package of best-choices. If so, this decision must result from vote trading (example 2 in the appendix will present such a possibility).

Proposition 1 does not specify the threshold of decision-making because it applies to all kinds of majority rule. Nonetheless, the chances of a player being included in a majority coalition vary by the threshold of decision-making. In the extreme case, a pivot is a player who is needed by all coalitions to adopt a resolution and can singlehandedly veto a decision. However, a pivot does not always exist. For example, in a three-person simple majority game, no player is a pivot because any two persons can form a majority coalition; if so, proposition 1 suggests that vote trading can easily take place because most results are unstable in a multi-dimensional space. With the rise of the threshold of decision-making, the chances of a player becoming a pivot increase and the status quo becomes more stable. In an assembly, minority

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[11] Proposition 1 is based on NCGT. It is a reminder of the claim that if preferences are separable across issues and if an option defeats all the other alternatives—the so-called Condorcet winner—under simple majority rule, then sincere voting yields this option (Schwartz 1977). This claim is similar to but different from proposition 1, which requires the resolution replacing the status quo to be "unbeatable" under *all kinds of majority rule* no matter what strategy the other players choose. Since the best choice may contain several options, the set of decisions satisfying proposition 1 can include the Condorcet winner but not restricted to it.

groups certainly hope the threshold of decision-making to be higher than simple majority, but not necessarily wishing to see a unanimous rule making every one a pivot. The following proposition will address the conditions allowing a pivot to exist.

Proposition 2. If vote trading happens when preferences are separable for every issue, then the status quo cannot be the best or second-best choice of any pivot across all issues.

To see why, consider the preference order of a pivot that has separable preferences for every issue. If the status quo is his/her best choice, he/she can unilaterally prevent the status quo from being changed, forestalling any vote trading from rising. For why the status quo cannot be his/her second-best choice, consider two possibilities. First, all pivots have the same best choice so that all can vote sincerely to produce their best choice. Second, best choice diverges among the pivots. Then any pivot with the status quo as his/her second-best choice can prevent the status quo from being disturbed by rejecting any proposal attempting to produce a worse outcome. In neither case is vote trading required. Therefore, Nash equilibrium cannot have "the status quo" as the best or second-best choice of any pivot across all issues.

In sum, the separability of issues and the threshold to adopt a decision both affect the likelihood of vote trading. We must give "issues" a clear definition when applying the model to an empirical problem. An issue may include any number of clauses in a bill or a constitutional draft, or no clause at all. It is possible that separable issues include non-separable items or the reverse. The key point is that the separability argument applies to issues, not items in an issue. The following section will explain why Taiwan is a suitable case and how the issues of its constitutional reform should be defined.

4. Why is Taiwan's constitutional reform a suitable case?

Testing the model of vote trading is intrinsically difficult. True preferences cannot be directly observed but have to be estimated and compared with the adopted resolutions across issues. In this sense, an in-depth analysis is a safer choice than a large-N study that may neglect the nuance of specific cases. The empirical study hopes to show that reformers traded their votes to improve the status quo but may result to unpopular consequences.

For several reasons, Taiwan is a good case to verify the model. First, Taiwan's National Assembly was in charge of amending the constitution with a two-thirds quorum and a three-fourth approval. What the preceding model predicts is exactly that a high threshold of decision-making may encourage vote trading even if preferences are separable. Second, the Kuomintang (KMT) and the Democratic Progressive Party

(DPP), the two pivots in the reform of the government system, have clear ideological positions. The KMT, then chaired by a native Taiwanese Lee Teng-hui, attempted to institute a direct presidential election to strengthen his legitimacy in a mainlander-dominated party. As a whole, however, the KMT insisted that the constitution represents the whole China and opposed Taiwan independence. The DPP, on the other hand, has been an ardent promoter of Taiwan independence. Third, Taiwan can hardly draft a new constitution, for it may signal a step toward building a new nation. An unrealistic design of the constitution is that the jurisdiction of the Taiwan Provincial Government (TPG) is almost identical to that of the Republic of China. For the DPP, TPG should be abolished to make Taiwan a normal country, but conflict across the Taiwan Strait may prevent it from happening. Political parties are thus motivated to shift their attention to the rearrangement of political powers. As will be shown later, vote trading created a powerful but unaccountable presidency.

Nevertheless, the KMT and the DPP have the consensus to institute the direct presidential election, which means the National Assembly has to receive some new powers to release its power to elect the president. It took three constitutional reforms held between 1991 and 1994 for Lee to reach this goal. However, the National Assembly election held on March 23, 1996 deprived the KMT of its three-quarters majority, making the DPP its indispensible partner (Higley et al. 1998). In fact, only the KMT and the DPP are the pivots in 1997. The stances of the two parties delimit the scope of the bargaining. Even so, the KMT and the DPP still differed by their chances of winning the presidential election. For the DPP, the Legislative Yuan (parliament) appeared to be its main battlefield, making power distribution between the presidency and the legislature a major issue. As can be expected, the KMT hoped to reinforce the president's constitutional power whereas the DPP sought to oversee the president.

Since both parties were pivots who wish to institutionalize a popular presidential election, semi-presidentialism became their common ground. This constitutional system can benefit either of them by different subtypes. For the KMT, the semi-presidential system can institute a presidency stronger than its counterpart in the presidential system if the president can unilaterally appoint the premier and actively dissolve the parliament, especially if the president heads a disciplined majority party. For the DPP, the president would be severally constrained if the appointment of the premier requires legislative approval and the parliament cannot be dissolved unless the premier is unseated first. There was a bipartisan consensus on the vote of no confidence (VNC), for that is an essential element of a semi-presidential system. Meanwhile, both President Lee and the DPP agreed to handle the TPG issue, though with different purposes. Which formula dominates depends on the set of feasible

options and the negotiation between the two sides. This is the topic of the next section.

5. How Taiwan Evidences the Vote Trading Model

This section will discuss the preconditions of the model and clarify the issues to be studied. Taiwan's 1997 constitutional reform is characterized by a multilateral relationship among the constitutional agencies. According to the adopted constitutional amendments, a popularly elected president appoints the premier without legislative confirmation, the parliament can initiate a VNC in the premier without holding the president accountable, and the president can dissolve the parliament only if a VNC is passed. In other words, the president, even if chairing the ruling party, will not be held accountable for his/her party in a snap election because the legislators will be reluctant to shorten their own legislative term. In terms of policymaking, Taiwan's president does not face the legislators directly and cannot veto legislation; instead, the legislators can only question the premier, the president's proxy. People expect the president to be the supreme policymaker, but the president is not responsible to any constitutional agency, especially in the second term. It is not difficult to think of a better design—for example, allowing the president to chair the majority party and actively dissolve the parliament so that he/she will be held accountable for his/her party's electoral performance, or take the opposite institutional arrangements. In both cases, power and accountability change in the same direction. There should be a reason to explain why Taiwan did not choose these alternatives.

To apply the model, we will first describe its precondtions: the definition of issues, the separability of preferences, and the original stances of the reformers. The next section will follow these preconditions and fit the model to the empirical data.

5.1 Issues

Issues are different from the articles in a bill or a constitution—the former is defined for analytical purposes and can include any number (or no number) of the latter. In fact, we can use the dimension-reduction techniques to derive the number of issues in a theoretical model and examine its composition. For constitutional reform, therefore, an issue refers to a specific and differentiable institutional arrangement. In this sense, the appointment of premier and the dissolution of parliament in Taiwan's constitutional reform should be seen as two different issues no matter how many articles each includes. Since both issues involve the relationship between the president, the premier, and the parliament, their combination constitutes the core of the subtypes of semi-presidentialism.

As will be demonstrated later, Taiwan's political parties have separable

preferences over the core issues of constitutional reform.[12] Note that for issues seen by all pivots as the best choice, trading votes on them will decrease the payoff of all. It is also unlikely for pivots to trade votes on positions at the bottom of their preference order; including them on the agenda will only cause a waste of time. We will specify the tradable and non-tradable issues after specifying the preference orders of the pivots.

Trivial issues aside, official archives suggest the following issues to be critical to the KMT and the DPP.

V (vote of confidence, VNC): whether to allow the parliament to dismiss the premier by a censure motion.

D (dissolution of parliament): whether to allow the president to dissolve the parliament; if yes, whether the president has to wait until a VNC is passed.

A (appointment of premier): whether to allow the president to appoint the premier without parliamentary approval.

L (other legislative powers): whether to give parliament the powers to impeach the president, review the official documents, investigate, audit, and hold hearings.

R (reconsidering of legislative resolutions): whether to lower the legislative threshold to re-pass the resolution demanded by the government for reconsideration.

E (electoral system): whether the constitution should define the electoral system used in the legislative elections.

T (TPG): whether to streamline or to abolish TPG.

C (cross-strait relations): whether to set up an extra-constitutional council to handle cross-strait relations.

Issues *V*, *D*, *A*, *L*, *R*, and *T* should be defined by constitution, *C* is extra-constitutional, and *E* may or may not be constitutional.[13] A vote trading affects the functioning of semi-presidentialism if *V*, *D*, and *A* are involved. How reformers position themselves on these issues is stated below.

5.2 Preferences

Given Taiwan's salient social cleavage, recognizing the true stances of the political elites is not difficult. Table 1 summarizes the issue stances of the KMT and the DPP, which should be distinguished from their bargaining positions.

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[12] There are a lot of proposals proposed by individual delegates of the National Assembly. The issues stated here include only important motions endorsed by political parties. For details of the 1997 constitutional reform, see the *guomin dahui huiyi shilu* (meeting records of the National Assembly), vol. 16-18, http://lis.ly.gov.tw/nacgi/ttsweb?@0:0:1:dbini/lymeetingdb@@0.6962012632289616 (accessed on April 30, 2014).

[13] The original constitution has articles about the legislative approval of the appointment of premier (Art. 55), reconsideration threshold (Art. 57), and the legal foundation of the provincial governments (Art. 112).

Table 1. Issue Stances

Issue	KMT	DPP
V	• 96/12/19: Legislative Yuan (LY) should have VNC • 97/6/26: Agreed to the restriction that VNC and dissolution cannot be used within the first year after the LY's election	• 96/12/21: LY should have VNC • 97/4/23: DPP insisted on VNC even if LY is not allowed to confirm premier appointment • 97/6/26: With some intraparty disagreement, agreed to the restriction that VNC and dissolution cannot be used within the year after the LY's election
D	• 96/12/19: Executive Yuan (EY) can dissolve LY • 97/4/12: President can actively dissolve LY • 97/6/10: Agreed to the consensus of passive dissolution	• 97/4/26: President can only passively dissolve LY • 97/6/10: Agreed to the consensus of passive dissolution
A	• 96/12/19: President can unilaterally appoint the premier • 97/3/21: President can unilaterally appoint the premier • 97/6/26: Agreed to the consensus that president can unilaterally appoint the premier	• 96/6/9: DPP strongly opposed vice president Lien Chan to continue his premiership and asserted that LY should reconfirm the appointment of premier • 97/6/26: Agreed to the consensus that president can unilaterally appoint the premier
L	• 97/6/21: KMT agreed to give LY the power to impeach the president in exchange for the cancellation of LY's power to confirm the appointment of the premier	• 96/12/19: LY should have the powers to impeach, investigate, and audit • 97/6/21: LY has the power to impeach the president
R	• 97/4/11: EY's request for reconsideration should be maintained even if VNC is adopted • 97/6/26: Agreed to the consensus that LY's threshold to override EY's request for reconsideration should be lowered from two-thirds of the LY members who are present to one-half	• 97/4/25: LY's threshold to override EY's request for reconsideration should be lowered from two-thirds of the LY members who are present to one-half of the total members • 97/6/26: Agreed to the consensus that LY's threshold to override EY's request for reconsideration should be

	of the total members	lowered from two-thirds of the LY members who are present to one-half of the total members
E	● 96/12/22: Size of LY should be increased to 200 and term to 4 years ● 97/4/12: Term of LY should be extended to 4 years ● 97/6/26: Agreed to the consensus that presidents should be elected by a run-off system	● 96/12/22: LY election should use mixed-member proportional (MMP) system; terms of LY and president should be made consistent; National Assembly (NA) should be abolished ● 97/4/25: LY election should use MMP ● 97/6/26: some DPP members questioned the consensus that presidents should be elected by a run-off system
T	● 96/12/19: TPG should not be abolished ● 97/6/26: Agreed to the consensus that TPG should be streamlined	● 96/12/19: TPG should be abolished; at least the related constitutional articles should be amended ● 97/6/26: Agreed to the consensus that TPG should be streamlined
C	● 96/12/22: One country, two political entities	● 96/12/22: Taiwan is an independent country; political entity is equivalent to a country

Notes: The National Development Conference (NDC) was convened between December 23 and December 28, 1996. NA in charge of the 1997 constitutional reform was held between May 5 and July 18, 1997.

Sources: United Daily News, United Evening News, Central News Agency, *disan jie guomin dahui dier ci huiyi shilu* (records of the second meeting for the third National Assembly).

Table 1 shows the issue stances of the party leaders starting from the NDC. The "true" preferences are assumed to be the earliest positions listed in the table, which can be traced back to the first direct presidential election held in 1996. For the KMT, the most pressing issue was the LY's power to confirm the appointment of the premier. The blocking of Lien Chan, the premier handpicked by Lee, into the LY in 1996 explains why the KMT wanted to exclude the legislators from the cabinet formation process. Thus, issue *A* was most critical to the KMT.[14] Concerning the president-legislative relationship, Lee prefers active dissolution to passive dissolution, with the status quo as the last choice. The DPP put most emphasis on issue *T*, the

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[14] According to an interview with Lee, the 5, 800 thousand votes rendering him the presidential position are much more legitimate than those received by the legislators whose electoral bases are much narrower and older. See Lee and Zou (2001: 104).

abolishment of TPG, for it makes Taiwan closer to an independent country.[15] When Lee was in power, the DPP had little chance winning the presidential election. For issue *D*, therefore, the DPP's chair preferred passive to active dissolution, with the status quo as the last choice.

For issues *V*, *L*, and *R*, the bipartisan consensus is high. Issue *V* can coexist with a strong or a weak presidency, and is thus acceptable to both parties. For issue *L*, the DPP certainly craved to increase the legislative powers; Lee agreed with the DPP's proposal as long as he can monopolize the appointment of the premier. As for the legislative threshold to override the EY's request for reconsideration, there was some dissonance at the beginning but the two parties quickly agreed to reduce it from a two-thirds majority of the legislators who are present to one-half of the total members of LY. Issues *E* and *C* were excluded from the agenda because the two parties took incompatible attitudes. For issue *E*, the DPP had been a proponent of the mixed-member proportional (MMP) system in the 1990s whereas the best choice of the KMT was either the mixed-member majoritarian (MMM) system or the status quo, for both can help the large parties obtain considerable seat bonuses. For issue *C*, most Taiwanese recognized the two parties by their divergent positions on national identity. The difference was too large to make it a constitutional issue.

The next section will operationalize the issue preferences and examine how the equilibria fit the reality.

6. The equilibria

As in most constitutional reforms, the following model assumes each party to have the same strategy set. That is, if each player has *X* strategies, the number of strategy combinations is X^2.[16] Constitutional reform requires the pivots to reach a consensus, and any defection from a non-status quo strategy combination will keep the status quo unchanged. The following statements recapitulate the negotiable issues and the stances on them (represented by lower case letters).

1. *A* (appointment of premier): (1) status quo (*q*) = confirmation, (2) no confirmation (*n*).
2. *D* (dissolution of parliament): (1) active dissolution (*a*), (2) passive dissolution (*p*), and (3) status quo (*q*).
3. *T* (Taiwan Provincial Government): (1) abolish (*a*), downsize (*d*), and (3) status quo (*q*).

Note that issues *A* and *D* should be considered after *V* becomes a bipartisan consensus,

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and their combination determines the subtype of Taiwan's semi-presidential system. In contrast, *T* can be addressed independently. Although the two parties tentatively agreed to "downsizing TPG" in the NDC, this was not the ultimate decision when the NA was convened in 1997.

To simplify description, we will use ">" to designate "preferred to"; when the preference order between two issue positions cannot be clearly distinguished, we use "=" to denote "indifference". Analysis above has shown that *V* is already a consensus and does not affect the final decision. For issue *A*, the KMT's preference order is *An* > *Aq*; for the DPP, it is *Aq* > *An*. For issue *D*, the KMT's preference order is *Da* > *Dp* > *Dq*; for the DPP, it is *Dp* > *Dq* > *Da*. For issue *T*, the preference order of the KMT is *Td* > *Ta* > *Tq*, for the DPP it is *Ta* > *Td* > *Tq*. Since these three issues are yet to be negotiated between the two parties, they produce 18^2 strategy combinations. Note that the KMT put a higher weight on issue *A*, and the DPP sees issue *T* as most critical. Multiplied by their weights, table 2 shows the top six choices of the two parties.

Table 2. Top Choices of the KMT and the DPP

Rank	KMT	DPP
1	*AnDaTd*	*AqDpTa*
2	*AnDpTd*	*AnDpTa; AqDqTa*
3	*AnDqTd*	*AnDqTa; AqDaTa*
4	*AnDaTa*	*AnDaTa*
5	*AnDpTa*	*AqDpTd*
6	*AnDqTa*	*AnDpTd; AqDqTd*

Source: Author's calculation

As shown in the table, as long as changes in the status quo require a consensus of the pivots, vote trading can be provoked easily. The question is whether vote trading damages social welfare and constitutional design. In the following, result 1 states the social optimality of vote trading for (*AnDpTd*) and (*AnDaTa*), the best consensus the two parties can reach.[17] Nevertheless, they have different implications for constitutional design, as will be illustrated in result 2.

Result 1. (AnDpTd) and (AnDaTa) are Pareto efficient Nash equilibria for the KMT and the DPP.

> The first step is to show that these two outcomes are Nash equilibria. Going down the preference order of the two parties, they will first meet at (*AnDpTd*), the KMT's second-best choice and the DPP's sixth choice, or (*AnDaTa*), the

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[17] Naturally, some other consensus are also Pareto efficient, but they are not the best consensus the two pivots can obtain.

fourth choice of the KMT and the DPP. Accordingly, if the two parties adopt (*AnDpTd*) or (*AnDa*Ta), none has the incentive to defect, for the payoffs are sure to decrease. Second, for their Pareto efficiency, the two parties cannot come up with a consensus to replace (*AnDpTd*) because (*AnDaTd*), which gives the KMT a higher payoff, means the DPP's loss. Similarly, (*AnDaTa*) cannot be improved because any alternative giving the DPP a higher payoff will not be acceptable to the KMT.

Result 2. (AnDpTd) and (AnDaTa) both result from vote trading but only the former mismatches power and accountability.

Table 2 shows that the two results do not violate theorem 2, and both follow vote trading. We learn from earlier discussions that power matches accountability if the two move in the same direction. The first option following this logic is (*AnDa*), allowing the president to singlehanded appoint the premier, actively dissolve the parliament, and be held accountable for his/her party's performance in the snap election. The second option is (*AqDp*), in which the president can do neither. Since the two parties both find (*AnDpTd*) better than no change at all, the KMT is motivated to give up its best choice and support *Dp* (rather than *Da*) and the DPP has the incentive to endorse *An* (rather than *Aq*), creating (*AnDpTd*) as a result. This outcome will not cause a snap election demanding a powerful president to be held accountable. In contrast, (*AnDaTa*) reflects the exchange of the KMT's best choice in constitutional design for the DPP's best choice in TPG, which makes a powerful president responsible for the parliamentary election he/she initiates. Therefore, only (*AnDpTd*) mismatches power and accountability.

Result 2 raises an important question for Taiwan's constitutional reform: why the final outcome is (*AnDpTd*) rather than (*AnDaTa*), a Pareto-efficient equilibrium yielding a more consistent arrangement of power and accountability?

Note that (*AnDa*) is exactly what the French Fifth Republic Constitution has stipulated: as the leader of the majority coalition, the president can unilaterally appoint the premier and actively dissolve the National Assembly, allowing him/her to stand on the forefront to lead his/her party. Taiwan could have created the same result if the KMT is willing to abolish TPG (a strong signal toward Taiwan independence) in exchange of the DPP's support for a more consistent arrangement of power and accountability. In fact, the first occasion on which the two parties might have made such a deal was the NDC held at the end of 1996 (Chao et al. 1996). Lee was in his second term after he won the 1996 presidential election, making power succession a pressing issue. James Soong, once Lee's close ally and now the Governor of the Taiwan Province, was becoming a menace. Lee's attempt to undermine Soong's

popular base coincided with the DPP's pursuit for Taiwan independence. That explains why the NDC put the same emphasis on TPG and the rearrangement of constitutional powers.[18]

That is, votes could have been traded between the independence-leaning DPP and the power-seeking KMT to abolish TPG and create a more consistent constitutional system. Had this been the case, the DPP would be more willing to give the president more powers and the accompanied accountability because the chances of the party winning the presidential election should be higher in an independent Taiwan. It was external threats that watered down this possibility. When the international community—the PRC in particular—is watching Taiwan's move toward independence, the KMT, as the ruling party, could at most suspend the elections for the TPG Governor even though the DPP insisted on eliminating the administrative level of TPG. The unsolved agreement explains why the end of the NDC marked the beginning of the constitutional reform—the KMT still needed the DPP to remove the legislative power to confirm the appointment of the premier and should demonstrate its determination to deal with the TPG problem.

Lee sent a signal to the DPP that abolishing TPG was virtually impossible, but other alternatives can be considered. Recognizing its limits, the DPP shifted its attention to the power relationship between the president and the parliament. When Lien Chan continued his premiership after he was elected the vice president in 1996, the DPP insisted Lien be reconfirmed by the LY. Knowing that Lee would insist on revoking the LY's power to confirm the appointment of the premier, the DPP sought to strengthen the legislative powers on the other issues. Most importantly, if the president can only dissolve the parliament after a vote of no confidence in the premier is passed, the legislators have the initiative to determine the president's action.[19] That calculation explains how the constitution was eventually amended.

To conclude, a comparison between the true stances and the adopted outcome in Taiwan's constitutional reform indicates that vote trading should have taken place. Nevertheless, vote trading does not suggest that power and accountability will be mismatched. The KMT and the DPP could have chosen a more consistent constitutional design, but external pressure prevented this result from happening. Since TPG can at best be streamlined, the DPP had a good reason to restrict the president's dissolution power in exchange of Lee's plan to eliminate the legislator's confirmation power. The short-term rationality of constitutional reformers may have created a presidency beyond the sight of other constitutional agencies in the

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[18] Some would even argue that the NDC was convened to settle down the TPG problem, with government system as the side payment. See http://www.haixiainfo.com.tw/74-6804.html (accessed on May 3, 2014).

[19] For the details of the bargaining process, see the United Daily News, June 29, 1997.

long-term.

7. Conclusion

Vote trading, an important topic in legislative study, can be applied to constitution choice that has to go through an assembly. Both approaches will ask whether the exchange of supports can improve the outcome of sincere voting. Given the large number of issues and the qualified majority rule that are often seen in constitutional reform, minority interests are given a strong leverage to affect the final outcome by trading their votes. What this paper finds is that, under the qualified majority rule, vote trading is possible even if preferences are separable. This paper also demonstrates that NCGT is a useful tool to unveil the mechanism of vote trading when no law enforces constitutional choice. The predictions of NCGT and CGT may differ, and several equilibria may follow the former. Negotiations are needed for the players to select a more preferable outcome.

In addition to the theoretical implications, this paper also points out how equilibrium selection is conditioned by the preconditions of vote trading, such as the decision-making rule, the reform issues, the preferences of the players, and pressures reducing the number of feasible alternatives. In particular, we highlight the constraints Taiwan was facing when it tried to reform its constitution. External pressures made additional articles more conceivable than modifying the original text of the constitution. For the same reason, abolishing TPG became a sensitive issue even though it was on top of the DPP's reform agenda. Downsizing TPG, a move already causing some doubts on Lee's pro-independence inclination, was the limit of the KMT's action. Excluding the abolishment of TPG, the number of viable alternatives decreased significantly. That, however, is unfortunate for Taiwan's constitutional design because it produced a constitutional system that is difficult to work. Without this transaction, power and accountability can be matched much consistently. Vote trading may be found in the choice of other constitutional systems, but only semi-presidential system can create such a complicated relationship among the constitutional agencies.

This paper also generates a significant normative question: who are represented to choose the constitution? We have seen how elected delegates trade their votes on different issues to prevent the final outcome from being worse than the deadlock. Vote trading could be stopped if other groups are included in the deliberation. For instance, if a referendum or another chamber is required to approve the constitutional amendment by a close rule, the reform proposal has a high chance of being rejected if the new decision-making body finds the status quo more preferable. Indeed, the rules of constitutional making affect how the constitution is to be made.

Appendix: A vote-trading game

Consider a game of vote trading, in which the information is complete and the players move simultaneously. Define the following terms:

1. $N = (1, 2,…n)$, the set of players,
2. i, a player in N,T
3. K, the issue-package to be decided by N; K contains $k > 1$ issues, and each issue is composed of a given number of discrete alternatives.
4. C_{Tj}, winning coalition j when the decision-making rule requires at least $T > n/2$ votes to adopt a resolution.

The following assumptions use these terms to establish the theorems of vote trading.

A1. $\forall i \in N$, any two issues in K is complete.

A2. For $\forall x, y, z \in K$, $x\mathrm{R}_i y$ and $y\mathrm{R}_i z \rightarrow x\mathrm{R}_i z$.

A3. Voters will vote for their best choice in K unless a more preferable outcome can be obtained.

A4. Any decision that changes the status quo requires a consensus reached by a winning coalition, otherwise no change can be made.

A5. Resolution x made by C_{Tx} defeats decision y made by C_{Ty} if C_{Tx} does not reduce the payoff of some members in C_{Ty} but improves the payoff of the other members in C_{Tx}.

By A1 and A2, the preference over options in K is separable. Each voter will thus have an order of their preferences. Three notes should be emphasized here. First, an obtainable outcome is different from the final decision. In formal terms, suppose x stands for "everyone vote for their best choice" and $\mathrm{W}(x)$ the set of alternatives that defeat x. Then x can be defeated by $z \in \mathrm{W}(x)$ even if $\mathrm{W}(z) \neq \varnothing$. Second, call the number of strategies to be $A_i = \alpha_{i1} \times \alpha_{i2} \times … \alpha_{ik}$, where α_{ij} is the number of alternatives for player i on the j-th issue. Accordingly, the number of strategy combinations is A_i^n because all players have the same strategy. A4 is a straightforward assumption because it says nothing about the size of a winning coalition—it is natural that any decision must be agreed by all members in a particular type of majority that is exogenously imposed by the decision-making rule. A5 gives a formal definition for the pairwise comparison between two decisions, especially the payoff of the intersection between any two winning coalitions.

Theorem 1. If preferences over every issue in K are separable and the result of the best choices cannot be defeated, then vote trading will not happen.

Proof. This theorem is an extension of A3. If all voters have separable preferences for every issue in K, their best choice for each issue is equivalent to B^*, the best choice of K, because no other alternative can defeat B^*. If so, all voters must have cast a sincere

vote to produce B^*. Since no x made by C_{Tx} can defeat B^*, and some voters in C_{Tx} must have cast a strategic vote, vote trading is impossible. B^* is in Nash equilibrium because any defection will not increase the defector's payoff. ∎

Suppose members of parties A, B, and C constitute a voting body N and deliberate issue I and issue II. Each issue has two choices: "change the status quo" and "no change of the status quo", denoted as 1 and 0. Suppose all members vote in accordance with their party. There are thus four options in K for each party.

Example 1. Decisions are made by simple majority rule but no party controls the majority of seats. In this example, preferences over the two issues are separable, giving voters the incentive to vote for their best choices. That means A, B, and C will select (0, 1), (1, 0) and (1, 1) for the two issues, resulting to (1, 1) as the collective choice. (1, 1) is not only the Condorcet winner but also the only Nash equilibrium: neither A nor B can reach a better outcome by shifting their strategy. This makes example 1 a baseline case satisfying theorem 1.

Example 1

	A	B	C
1	0, 1	1, 0	1, 1
2	1, 1	1, 1	0, 1
3	0, 0	0, 0	1, 0
4	1, 0	0, 1	0, 0

Note that theorem 1 does not imply that separable preferences for every issues in the issue-package will automatically make vote trading impossible—the key point is the "undefeatable" choice. We will show in example 2 that vote trading can still be triggered even if preferences are separable for each issue if the choice can be defeated. In particular, we need to consider the status quo when every result can be defeated. In a multi-dimensional Euclidean space, the probability of the undefeatable set being nonempty is almost zero under the simple majority rule. By the same logic, however, the existence of the status quo becomes more important under a qualified majority rule.

Example 2

	A	B	C
1	0, 1	1, 0	0, 0
2	1, 1	1, 1	0, 1
3	0, 0	0, 0	1, 0
4	1, 0	0, 1	1, 1

Example 2. This case shows that, even when preferences are separable for each issue, voters do not always choose their best choice if the result can be defeated. Again, suppose decisions are made by simple majority rule but no party controls the majority. Given the separable preferences, parties A, B, and C should vote for (0, 1), (1, 0), and (0, 0) respectively, making (0, 0) the collective choice. However, A and B will both find (1, 1) better than (0, 0). This preference structure creates two pure-strategy Nash equilibria. The first is (1, 1) because any defection by A or B will lead to (0, 0). The second is (0, 0), which can only be defeated by (1, 1) if A and B shift their strategies *simultaneously*. To change from (0, 0) to (1, 1), A and B have to coordinate their choices.

Example 3 looks like a two-issue scenario but C's preference is inseparable. This can be treated as an example with inseparable preferences, but for Taiwan's sake we can simply assume it to be a one-issue case even though the issue contains two items with inseparable preferences. Also notice that no player pivots the three possible coalitions. With only one issue at hand, (0, 0)—the best choice of C—cannot win majority support. Nevertheless, neither can A or B select their best choices and form a majority coalition. To prevent the lack of consensus from creating a deadlock, A and B should both choose (1, 1) and make this the final resolution (see A3). There are two pure-strategy Nash equilibria. The first one is (0, 0), which cannot be changed by the defection of any player. The second is (1, 1), the defection from which will only reduce the payoff of A or B. Again, the co-existence of two equilibria shows the necessity of negotiation. Clearly, vote trading is needed for A and B to reach a more preferable outcome.

Example 3

	A	B	C
1	0, 1	1, 0	0, 0
2	1, 1	1, 1	1, 1
3	0, 0	0, 0	1, 0
4	1, 0	0, 1	0, 1

Using NCGT to derive the results, theorem 1 is similar to but different from the claim that sincere voting yields the Condorcet winner if preferences are separable (Schwartz 1977). The Condorcet winner is determined by simple majority rule but theorem 1 applies to all types of majority rule. It is quite likely that the rise of the threshold to adopt a resolution will also increase the number of voters who can veto decision-making. That is, a pivot who has "no change" as her best choice can

singlehanded prevent the status quo from being changed. This possibility is elaborated in theorem 2.

To help description, we define the following terms:

1. q: status quo across all issues;

2. q_{vj}: for any pivot $v \in N$, q ranks jth across all issues.

Theorem 2. When vote trading takes place, $\{q_{v1}, q_{v2}\} = \varnothing$ for $\forall v \in N$.

Proof. To facilitate analysis, we call "voting for one's best choice" sincere voting and "not voting for one's best choice" strategic voting.

1. If $q_{v1} \neq \varnothing$, v can unilaterally create q, making it unnecessary for the other voters to vote strategically.

2. If $q_{v2} \neq \varnothing$ and preferences are separable, then no other pivot can have the same best choice and second-best choice, otherwise sincere voting will produce an outcome better than q. But then all pivots must have the same best choice, otherwise v can reject any proposal attempting to create an outcome worse than q_{v2}. In neither scenario can vote trading change the result.

Accordingly, $\{q_{v1}, q_{v2}\} = \varnothing$ is a necessary condition for vote trading to take place. ■

Note that theorem 2 states the necessary but not the sufficient conditions of vote trading. That is, vote trading may not happen even if "no change" is ranked below the second-best choice.

To illustrate theorem 2, consider example 2 again. Suppose the qualified majority rule makes A and B rather than C the pivots. Then (1, 1) and (0, 0) are still the Nash equilibria. To beat (0, 0), A and B have a strong incentive to coordinate their choices and endorse (1, 1), which Pareto dominates (0, 0) but results from vote trading. That is, A will strategically approve issue I and B will tactically support issue II.

In conclusion, we have shown that (1) even if preferences are separable, vote trading can still happen under various kinds of majority rule; (2) the existence of multiple equilibria makes reciprocal negotiations common in constitutional reform.

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