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An Economic View on the Political Stability along the Taiwan Strait over the Independence/Unification Issue*

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In this paper we use a simple trade model to investigate how differences in Taiwan's and Mainland China's production comparative advantages, attitudes toward consumption and GNPs per capita could possibly affect the political stability along the Taiwan Strait over the issue of independence or unification that faces Taiwanese and Mainland Chinese as well. The results derived here represent necessary conditions for possible economic and political integration. Though the model developed here is very crude, insightful results can still be obtained without much sacrifice on the political realities that we have seen today. Possibility for further extension and limitation of this paper are also discussed.

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I. Introduction

It has come to a point when not just politicians but all the people on Taiwan (as a *she* for easy reference) have to give a serious look and think about where this island is going politically. This issue of Taiwan's political independence from or unification with Mainland China (as a *he* for easy reference) had concerned not only people on both sides of the Taiwan Strait but also politicians around the world for almost half a century. There was a time when people could be and many indeed were slaughtered, imprisoned or put in exile for no other causes than positions they stood over this issue were not favored by their government leadership. We the people on Taiwan are lucky today and should be grateful too that the political atmosphere on this island has changed so much that we are all allowed to openly express (without fear, the author supposes) our views and debate over our own political fate. The timing now is particularly important for us because the cold war is over and the new world order, contrary to what former U.S. President George Bush claimed, has not been established.[1] While tension in Europe has largely been relieved, the focus is now on the once largely ignored eastern hemisphere of this globe.[2] Undoubtedly, any development (especially, independence or unification achieved by peaceful or turbulent means) in the relationship between the two Chinas has to be *a*, if not *the*, determining factor in this new geopo-

litical map redrawing game that promises stability or instability in not only the Pacific Rim but the whole world as well.

Recent development in the relationship between the two Chinas has called to our attentions various economic, social and political concerns. From economic perspectives, parallel to the already existent reality of an increasingly closer and closer economic tie between both sides, a lot of researches on trade relations, direct investments (from Taiwan to Mainland China), labor imports (from Mainland China to Taiwan), etc. that concern both Taiwanese and Mainland Chinese have been conducted or are currently under way.[3] However, the very issue of Taiwan's independence from or unification with Mainland China has remained relatively untouched by our peer economists until recently.[4]

In this paper we shall study the economic facet of this problem and see how differences in various factors like production comparative advantages, attitudes toward consumption and GNPs per capita (or average productivities in labor forces) in these two political entities could possibly affect the political stability on both sides of the Taiwan Strait over this independence/unification issue.

II. Model Description of Taiwan and Mainland China

The theoretical framework adopted here is a simple trade model based on Adolf Hitler's famous gun-and-butter example so frequently used in most introductory economics textbooks in introducing the concepts of production possibility frontier and comparative advantage.[5] We shall temporarily suppress the subscripts (T and M respectively) used to indicate Taiwan and Mainland China in the following general description of these two de facto politically independent entities. They will reappear later when such distinction is needed.

The economy is assumed to have a population size of N^* agents producing two commodities, consumption goods(C) and weaponry(W). The production possibility frontier is assumed to be linear in C and W taking a form of

$$C + \alpha W = f(N) \quad \text{with } \alpha > 0, \quad f'(.) > 0^6$$

where (i) C and W are substitutes in production meaning that they compete with each other for input factors;[7] (ii) α indicates the (relative) comparative advantages of the economy in the production of both commodities with higher α implying higher opportunity cost for producing W (in terms of C forgone) and lower opportunity cost for producing C (in terms of W forgone); (iii) increasing monotonicity in $f(.)$ is just a reflection of positive marginal productivity of labor inputs; and (iv) $N \in (0, N^*]$ is the effective (or employed) labor force with N^* as the actual population size.[8] A linear production possibility frontier will necessarily dictate the equilibrium prices in a market economy which, in our case, is $p_c : p_w = 1 : \alpha$ where p_c and p_w are respectively the market prices of C and W. One obvious way of normalization will be by setting $p_c = 1$ which implies that $(p_c, p_w) = (1, \alpha)$. Notice that these prices do reflect the opportunity costs in the production of C and W. Under such normalization, the function $f(.)$ is then the economy's *normalized GNP*.

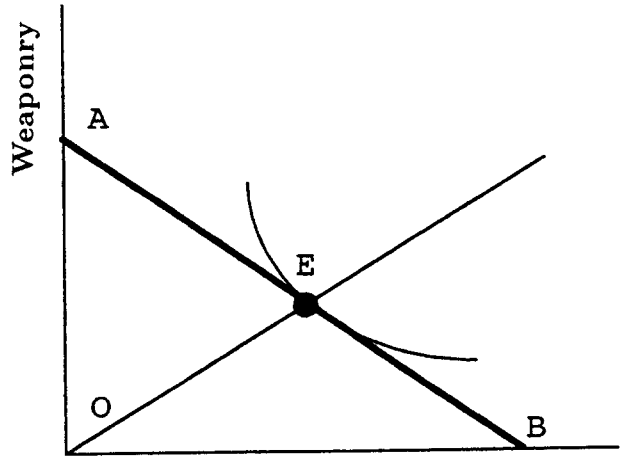
The social utility function for that economy is assumed to take a Cobb-Douglas form of $U(C, W) = \beta lnC + (1 - \beta) lnW$.[9] We will also assume that the general population is only interested in the pursuit of higher living standard (i.e., C or $\frac{C}{N^*}$) and it is the government's (or the leader's) responsibility to safeguard the economy (for the sake of national interests or "national interests") by diverting some of the resources into the production or acquisition of W. $\frac{C}{N^*}$ is treated as an indication of living standard and $< \frac{C}{N^*} >$ will be used to denote the living standard index.

Therefore, if without trade with the foreign sector the economy solves the following problem of

$$\text{Max} \qquad U(C,W) = \beta lnC + (1-\beta)lnW$$

$$\text{Subject to} \quad C + \alpha W \leq f(N) \quad \text{with} \quad \alpha > 0,\ f'(N) > 0$$

leading to the optimal choice of $(C^*, W^*) = \left(\beta f(N), (1-\beta)\frac{f(N)}{\alpha}\right)$. See Figure 1.



AB: $C + \alpha W = f(N)$ **E**: $\left(\beta f(N), (1-\beta)\frac{f(N)}{\alpha}\right)$

Figure 1

Here we can clearly see that the higher β is the more emphasis people in this economy would put on consumption (or equivalently, living standard). As a matter of fact, under the aforementioned price normalization, β is simply the portion of the GNP this economy is willing to put into consumption (i.e., its *propensity to consume*) and the living standard index is merely $< \frac{C}{N^*} >= \frac{\beta f(N)}{N^*}$.

III. Possible Developments Regarding the Status of Taiwan

One of the hottest issue in Taiwan's politics today is whether Taiwan should officially declare her independence from Mainland China and relinquish her "tie" with him (By the "tie" we mean insistence on the "One China" policy and resistance against any proposed change in her Constitution regarding the identity of the nation.)[10] However, agendas proposed by both Taiwan's ruling party, Kuo Ming Tang (K.M.T.), and the largest opposition party, Democratic Progressive Party (D.P.P.), do not seem to make much difference from economic viewpoints as far as Taiwan's political status is concerned.[11] One of the purpose of this paper is to provide an economic analysis on this important issue. Given certain criterion for unification or independence,[12] we investigate situations when or if pressures from within Taiwan would arise to seek independence from Mainland China and when or if similar situations will happen in Mainland China to seek unification with Taiwan. Our focus will only be on how political stability along the Taiwan Strait could possibly be affected by internal pressures from within the two Chinas yearning for separation or unification. True military contemplation which is a more accurate reflection of political stability will necessarily involve more subtle calculation and is not considered here.

We treat the status quo and peaceful independence as identical and compare it with the case of peaceful unification.

Possibility 1: The Status Quo or Peaceful Independence for Taiwan.

Generally speaking there is no difference between staying with the status quo (closer to the K.M.T. scenario except that it labels itself proponent of the "One China" ideology and "possible" future peaceful unification with Mainland China) and declaration of independence in the absence of a mili-

tary intervention from Mainland China (a one-way thinking of the D.P.P. that may run a risk of seriously miscalculating Mainland China's true intention). From economic viewpoints, changes in the national anthem and flag is just like changes in brand names of products. Though it is unknown whether there does exist a "royal ally phenomenon" in the world politics equivalent to the "royal customer phenomenon" in economics, experiences do suggest that it is *substance* that really matters.[13] In the following, we shall assume $N_T^* = N_T$ and $N_M^* = N_M$ that effective labor forces for both economies are the same as their respective population sizes.

Suppose Taiwan has a production possibility frontier of $C_T + \alpha_T W_T = f_T(N_T)$ and that of Mainland China is $C_M + \alpha_M W_M = f_M(N_M)$. Difference in the slopes is a reflection of the assumption $\alpha_T > \alpha_M$ which implies that Taiwan has a comparative advantage in the production of C and Mainland China in the production of W. Mutually beneficial trades between these two economies are likely to (and indeed will) occur with Taiwan selling C to Mainland China in exchange for W to defend herself from possible hostile actions from him. This story may sound crazy since both economies are still politically and militarily hostile rivals. But that is exactly what happens in reality. Economics can explain that. Imagine there is a foreign sector endowed with a production possibility frontier of $C_F + \alpha_F W_F = f_F(N_F)$ with $\alpha_T > \alpha_F > \alpha_M > 0$ which correctly reflects the very reality that Mainland China is a weaponry exporting country and Taiwan is an importing one.[14] Since the foreign sector is relatively large in its size as compared with those of Taiwan and Mainland China, Taiwan will benefit from selling C to the foreign sector and buying W from it while Mainland China will also benefit but from actions in the opposite direction. Thus, when trade does take place, the new possibility frontiers (or more appropriately, budget lines) will be $C_T + \alpha_F W_T = f_T(N_T)$

for Taiwan and $C_M + \alpha_F W_M = \alpha_F \frac{f_M(N_M)}{\alpha_M}$ for Mainland China. Social utility functions are respectively $U_T(C_T, W_T) = \beta_T lnC_T + (1 - \beta_T) lnW_T$ for Taiwan and $U_M(C_M, W_M) = \beta_M lnC_M + (1 - \beta_M) lnW_M$ for Mainland China. We will further assume $1 > \beta_T > \beta_M > 0$ meaning that Taiwanese are relatively more interested in pursuing higher living standard or more materialistic. The outcome of trade is easy to see and both Taiwan and Mainland China are better off than they could have been without trade. See Figure 2 for an illustration where the two D points are their optimal choices when no trade occurs and the two E points are their optimal choices with trade.

When there is trade, Taiwan exhausts her comparative advantage in C by producing that product alone and exports her more-than-needed C in exchange for W for defense and Mainland China, on the contrary, produces W alone and exports his abundant W in exchange for C to improve the living of his people.

Possibility 2: Peaceful Unification

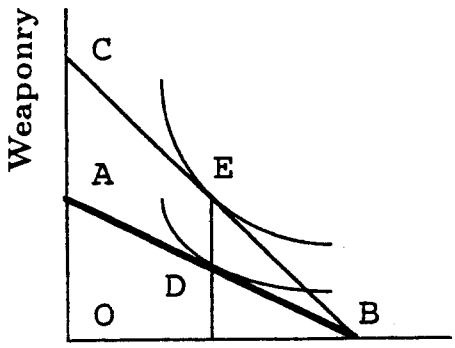
When both sides can find common grounds for peaceful unification, the outcome on the production side will be aggregation (i.e., sum) of the two production possibility sets.[15] As for the consumption side concerning the social utility function for this Unified Grand China (R.O.C., P.R.C. or whatever), it is assumed to take the form of

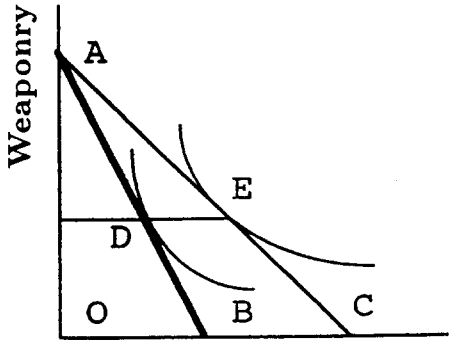
$$U(C, W) = \hat{\beta} lnC + (1 - \hat{\beta}) lnW$$

with $\hat{\beta} \equiv \lambda \beta_T + (1 - \lambda)\beta_M$ where $\lambda \in [0, 1]$ is called the *coefficient of ideology*.[16] Notice that with $\lambda = 0$ the resultant social utility function of the Unified Grand China is exactly the same as that of Mainland China and with $\lambda = 1$ we then obtain a social utility function same as that of Taiwan. As λ increases this new social utility function will be more "ideologically" (in terms

of its societal attitude toward consumption) away from Mainland China and getting closer to that of Taiwan. Taking into account the effect of trade with the rest of the world, the Unified Grand China now has a new budget line of

$$C + \alpha_F W = f_T(N_T) + \alpha_F \frac{f_M(N_M)}{\alpha_M}$$





AB: $C_T + \alpha_T W_T = f_T(N_T)$

BC: $C_T + \alpha_F W_T = f_T(N_T)$

A: $(0, \frac{f_T(N_T)}{\alpha_T})$; **B**: $(f_T(N_T), 0)$

C: $(0, \frac{f_T(N_T)}{\alpha_F})$

D: $(\beta_T f_T(N_T), (1-\beta_T)\frac{f_T(N_T)}{\alpha_T})$

E: $(\beta_T f_T(N_T), (1-\beta_T)\frac{f_T(N_T)}{\alpha_F})$

AB: $C_M + \alpha_M W_M = f_M(N_M)$

AC: $C_M + \alpha_F W_M = \alpha_F \frac{f_M(N_M)}{\alpha_M}$

A: $(0, \frac{f_M(N_M)}{\alpha_M})$; **B**: $(f_M(N_M), 0)$

C: $(\alpha_F \frac{f_M(N_M)}{\alpha_M}, 0)$

D: $(\beta_M f_M(N_M), (1-\beta_M)\frac{f_M(N_M)}{\alpha_M})$

E: $(\frac{\alpha_F}{\alpha_M}\beta_M f_M(N_M), (1-\beta_M)\frac{f_M(N_M)}{\alpha_M})$

Assuming that $\alpha_T > \alpha_F > \alpha_M > 0$ and $1 > \beta_T > \beta_M > 0$

Taiwan Mainland China

Figure 2

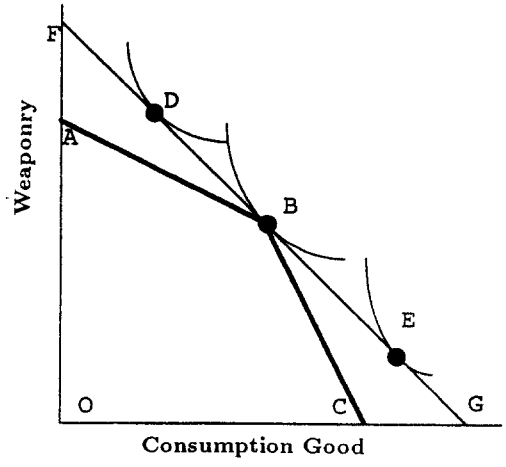
The problem for this Unified Grand China will then be to maximize the new social utility function subject to the new budget line as depicted in Figure 3. The optimal solution is

$$C^* = \hat{\beta}\left[f_T(N_T) + \alpha_F \frac{f_M(N_M)}{\alpha_M}\right], \quad W^* = (1-\hat{\beta})\left[\frac{f_T(N_T)}{\alpha_F} + \frac{f_M(N_M)}{\alpha_M}\right]$$

and the living standard index is

$$< \frac{C}{N} >= \frac{\hat{\beta}[f_T(N_T) + \alpha_F \frac{f_M(N_M)}{\alpha_M}]}{N_T + N_M} = \frac{\hat{\beta} f_T(N_T)}{\beta^*(N_T + N_M)}$$

where $\beta^* \equiv \frac{f_T(N_T)}{f_T(N_T)+\alpha_F \frac{f_M(N_M)}{\alpha_M}} \in (0,1)$ which is simply Taiwan's contribution in ratio terms to the normalized GNP of the Unified Grand China. As can be seen here in Figure 3, the location of (C^*, W^*) can fall on points like D, B or E depending on the value that $\hat{\beta}$ takes as relative to the value of β^*.



AB: $C + \alpha_T W = f_T(N_T) + \alpha_T \frac{f_M(N_M)}{\alpha_M}$; **BC**: $C + \alpha_M W = f_T(N_T) + f_M(N_M)$;

FG: $C + \alpha_F W = f_T(N_T) + \alpha_F \frac{f_M(N_M)}{\alpha_M}$; **B**: $(f_T(N_T), \frac{f_M(N_M)}{\alpha_M})$;

$\beta^* \equiv \frac{f_T(N_T)}{f_T(N_T)+\alpha_F \frac{f_M(N_M)}{\alpha_M}}$; $\lambda^* \equiv \frac{\beta^*-\beta_M}{\beta_T-\beta_M}$; $\hat{\beta} \in [\beta_M, \beta_T]$; $\lambda \in [0,1]$;

at **B**: $\lambda = \lambda^*$ and $\hat{\beta} = \beta^*$, at **D**: $\lambda < \lambda^*$ and $\hat{\beta} < \beta^*$, at **E**: $\lambda > \lambda^*$ and $\hat{\beta} > \beta^*$.

Unified Grand China

Figure 3

The immediate question for us then is if peaceful unification a better (and thus possible) alternative to the status quo or peaceful separation. The problem can be rephrased as whether both sides can find a mutually acceptable coefficient of ideology λ such that the resultant consumption level in this unified economy could lead to a higher $< \frac{C}{N} >$ than each could have attained when left alone.[17] From economic viewpoints, a higher $< \frac{C}{N} >$ index for this unified economy will be needed in order to induce supports for unification from Taiwanese and Mainland Chinese. Therefore, for both sides to accept (or more accurately, not to reject) a peaceful unification proposal, the *necessary conditions* will be

$$\frac{\hat{\beta} f_T(N_T)}{\beta^*(N_T + N_M)} \geq \frac{\beta_T f_T(N_T)}{N_T} \quad \text{for Taiwan}$$

and $$\frac{\hat{\beta} f_T(N_T)}{\beta^*(N_T + N_M)} \geq \frac{\alpha_F}{\alpha_M} \frac{\beta_M f_M(N_M)}{N_M} \quad \text{for Mainland China}$$

that they both benefit from it. These two conditions are equivalent to

(1) $$\hat{\beta} \geq \frac{N_T + N_M}{N_T} \beta_T \beta^* (\equiv \beta_T^* \text{ for notational ease}) \text{ for Taiwan and}$$

(2) $$\hat{\beta} \geq \sigma \frac{f_M(N_M)}{f_T(N_T)} \frac{N_T + N_M}{N_M} \beta_T \beta^* (= \sigma \frac{f_M(N_M)}{f_T(N_T)} \frac{N_T}{N_M} \beta_T^* \equiv \beta_M^*$$

for notational ease) for Mainland China.

where $\sigma \equiv \frac{\alpha_F \beta_M}{\alpha_M \beta_T}$ is called the *situation index*. Notice that β_T^* and β_M^* in inequalities (1) and (2) provide a *lower bound* on $\hat{\beta}$—the percentage of normalized GNP per capita that must be put into consumption in order for the

unification proposal not to be rejected by Taiwan and Mainland China, respectively. That is, they are *necessary (rather than sufficient) conditions* that must be met simultaneously such that a real move toward peaceful unification (which includes not just economic integration but also integration of a much larger scope such as integration of two different legal systems) can actually be contemplated and put into action. If $\hat{\beta} < \beta_T^*$ (or respectively, $\hat{\beta} < \beta_M^*$), Taiwan (or respectively, Mainland China) can do better when she (he) is left alone and will reject the idea of a peaceful unification with the other.

IV. Economic and Political Implications

Result 1: At the status quo, Taiwanese enjoy a $\left\{ \begin{array}{c} \text{higher} \\ \text{equal} \\ \text{lower} \end{array} \right\}$ living standard as compared with that enjoyed by Mainland Chinese if and only if $\sigma \left\{ \begin{array}{c} < \\ = \\ > \end{array} \right\} \dfrac{\dfrac{f_T(N_T)}{N_T}}{\dfrac{f_M(N_M)}{N_M}}$.

Proof: Just compare the living standard indices $< \frac{C}{N} >$ for both societies.

Result 2: $\sigma \left\{ \begin{array}{c} < \\ = \\ > \end{array} \right\} \dfrac{\dfrac{f_T(N_T)}{N_T}}{\dfrac{f_M(N_M)}{N_M}}$ if and only if $\beta_M^* \left\{ \begin{array}{c} < \\ = \\ > \end{array} \right\} \beta_T^*$.

Proof: It is directly from the definitions of β_M^* and β_T^*.

Result 3: As far as normalized GNP per capita is concerned, (peaceful) unification benefits the poorer side but hurts the richer side. That is,

$$\frac{f_T(N_T)}{N_T} \left\{ \begin{matrix} < \\ = \\ > \end{matrix} \right\} \frac{\alpha_F}{\alpha_M} \frac{f_M(N_M)}{N_M}$$

$$\Rightarrow \frac{f_T(N_T)}{N_T} \left\{ \begin{matrix} < \\ = \\ > \end{matrix} \right\} \frac{f_T(N_T) + \frac{\alpha_F}{\alpha_M} f_M(N_M)}{N_T + N_M} \left\{ \begin{matrix} < \\ = \\ > \end{matrix} \right\} \frac{\alpha_F}{\alpha_M} \frac{f_M(N_M)}{N_M}$$

Proof: Simple.

Result 4: At the status quo, Taiwanese normalized GNP per capita is $\left\{ \begin{matrix} \text{higher than} \\ \text{equal to} \\ \text{lower than} \end{matrix} \right\}$ that for Mainland Chinese if and only if $\sigma \left\{ \begin{matrix} < \\ = \\ > \end{matrix} \right\} \frac{\beta_M}{\beta_T} \frac{\frac{f_T(N_T)}{N_T}}{\frac{f_M(N_M)}{N_M}}$.

Proof: Divide the normalized GNP for each economy by its population to get its normalized GNP per capita. Then use the definition for σ to make comparison.

Result 5: $\sigma \left\{ \begin{matrix} < \\ = \\ > \end{matrix} \right\} \frac{\frac{f_T(N_T)}{N_T}}{\frac{f_M(N_M)}{N_M}}$ if and only if $\frac{1}{\beta^*} \left\{ \begin{matrix} < \\ = \\ > \end{matrix} \right\} 1 + \frac{\beta_T}{\beta_M} \frac{N_M}{N_T}$,

and $\sigma \left\{ \begin{matrix} < \\ = \\ > \end{matrix} \right\} \frac{\beta_M}{\beta_T} \frac{\frac{f_T(N_T)}{N_T)}}{\frac{f_M(N_M)}{N_M}}$ if and only if $\frac{1}{\beta^*} \left\{ \begin{matrix} < \\ = \\ > \end{matrix} \right\} 1 + \frac{N_M}{N_T}$.

Proof: Directly from $\frac{1}{\beta^*} = 1 + \frac{\alpha_F}{\alpha_M} \frac{f_M(N_M)}{f_T(N_T)} = 1 + \sigma \frac{\beta_T}{\beta_M} \frac{f_M(N_M)}{f_T(N_T)}$.

Result 6: (1) $0 < \sigma < \frac{\beta_M}{\beta_T} \frac{\frac{f_T(N_T)}{N_T}}{\frac{f_M(N_M)}{N_M}} \Rightarrow \beta_M^* < \beta_M < \beta_T < \beta_T^*$,

(2) $\sigma = \frac{\beta_M}{\beta_T} \frac{\frac{f_T(N_T)}{N_T}}{\frac{f_M(N_M)}{N_M}} \Rightarrow \beta_M^* = \beta_M < \beta_T = \beta_T^*$,

$$(3)\ \frac{\beta_M}{\beta_T}\frac{\frac{f_T(N_T)}{N_T}}{\frac{f_M(N_M)}{N_M}} < \sigma < \frac{\frac{f_T(N_T)}{N_T}}{\frac{f_M(N_M)}{N_M}} \Rightarrow \beta_M < \beta_M^* < \beta_T^* < \beta_T,$$

$$(4)\ \sigma = \frac{\frac{f_T(N_T)}{N_T}}{\frac{f_M(N_M)}{N_M}} \Rightarrow \beta_M < \beta_M^* = \beta_T^* < \beta_T\ ,$$

$$(5)\ \sigma > \frac{\frac{f_T(N_T)}{N_T}}{\frac{f_M(N_M)}{N_M}} \Rightarrow \beta_M < \beta_M^*,\ \beta_T^* < \beta_T,\ \beta_T^* < \beta_M^*,$$

$\beta_M < \beta_T$.

Proof: Directly from $0 < \beta_M < \beta_T < 1$, Result 2, Result 5 and the following facts that $\frac{\beta_T}{\beta_T^*} = \frac{N_T}{N_T + N_M}\frac{1}{\beta^*}$, $\frac{\beta_M}{\beta_T^*} = \frac{\beta_M}{\beta_T}\frac{\beta_T}{\beta_T^*}$,

$$\frac{\beta_T}{\beta_M^*} = \frac{1}{\sigma}\frac{f_T(N_T)}{f_M(N_M)}\frac{N_M}{N_T}\frac{\beta_T}{\beta_T^*} = \frac{\beta_T}{\beta_M}\frac{N_M}{N_T + N_M}\frac{1}{1-\beta^*},$$

and $\frac{\beta_M}{\beta_M^*} = \frac{\beta_M}{\beta_T}\frac{\beta_T}{\beta_M^*}$.

Note: Implications

(i) Compare Result 1 and Result 4. *It is clear that (normalized) GNP per capita does not completely translate into living standard. Propensities to consume for both economies (i.e., β_M and β_T) matter too.* So it is no wonder at all that, under the assumption that Taiwanese are more willing to spend on consumption than Mainland Chinese (i.e., $\beta_T > \beta_M$), higher GNP per capita for Taiwan does imply people there enjoy better lives than their counterparts in Mainland China and lower GNP per capita there does not mean that Taiwanese will necessarily have lower living standard than that enjoyed by Mainland Chinese. The reason is that, as far as the welfare of the public is concerned, the part of W kept for national defense rather than for

export is simply a waste (in peace time) and does no good to the society.

(ii) Result 3 is simply a reflection of a simple algebraic rule appearing so often in economics that the average increases whenever it is lower than the marginal and decreases if it is higher than the marginal.

(iii) Whether there is political tension between Taiwan and Mainland China depends on their attitude toward the idea of (peaceful) unification. As shown earlier (equations (1) and (2)),

$$\text{Taiwan} \left\{ \begin{array}{c} \text{accepts} \\ \text{feels indifferent with} \\ \text{rejects} \end{array} \right\} \text{peaceful unification if } \hat{\beta} \left\{ \begin{array}{c} > \\ = \\ < \end{array} \right\} \beta_T^* \text{ and}$$

$$\text{Mainland China} \left\{ \begin{array}{c} \text{accepts} \\ \text{feels indifferent with} \\ \text{rejects} \end{array} \right\} \text{peaceful unification if } \hat{\beta} \left\{ \begin{array}{c} > \\ = \\ < \end{array} \right\} \beta_M^*.$$

If one accepts and the other rejects, we consider that there is tension. Otherwise, when one accepts (respectively, rejects) and the other agrees or feels indifferent, then they are likely to resolve the issue peacefully. The empirically observable reality concerning the well-being of people on both sides of the Taiwan Straight for the moment is that Taiwan enjoys a higher living standard and normalized GNP per capita than Mainland China does. Furthermore, Mainland China has a higher population than that of Taiwan and that Taiwan has a higher propensity to consume. So in notational terms, by Result 1 and Result 4, they are

$$0 < \sigma < \frac{\beta_M}{\beta_T} \frac{\frac{f_T(N_T)}{N_T}}{\frac{f_M(N_M)}{N_M}} < \frac{\frac{f_T(N_T)}{N_T}}{\frac{f_M(N_M)}{N_M}} \text{ and } N_T < N_M$$

which, by Result 6 (1) and the construction of $\hat{\beta}$ that $\hat{\beta} \in [\beta_M, \beta_T]$, suggests that $\beta_M^* < \beta_M \leq \hat{\beta} \leq \beta_T < \beta_T^*$. *It is then clear that at the current*

moment Taiwan will reject the idea of unification with Mainland China even through peaceful (i.e., non-military) means but Mainland China will have a higher incentive to unify Taiwan. This may explain why Taiwan views moves by Mainland China as hostile attempts to unify her and Mainland China views gestures by Taiwan as unfriendly attempts to politically further alienate herself from him. Notice that our model provides necessary but not sufficient conditions for contemplation of a peaceful unification, so political tension between these two sides does not always lead to a military conflict. We must keep in mind, though, that political tension certainly does not exclude contemplation of a possible military attempt from one side against the other. This also explains why Mainland China never agrees to denounce the use of force to achieve his goal of unification with Taiwan.

Now if we look at Result 6 (1), (2), (3) and (4), we find out that as the situation index $\sigma \equiv \frac{\alpha_F \beta_M}{\alpha_M \beta_T}$ increases (or $\frac{\frac{f_T(N_T)}{N_T}}{\frac{f_M(N_M)}{N_M}}$ decreases), the chance of either peaceful separation or peaceful unification (i.e., lower political tension) does increases. And as σ reaches $\frac{\frac{f_T(N_T)}{N_T}}{\frac{f_M(N_M)}{N_M}}$, there will be no tension arising from economic arena. The reason is because that, as σ increases, Taiwan is becoming more of a liability than an asset to Mainland China. And as σ grows to outpace $\frac{\frac{f_T(N_T)}{N_T}}{\frac{f_M(N_M)}{N_M}}$, we then have $\beta_M^* > \beta_T^*$ as Result 2 and Result 6 (5) indicate and it will be Taiwan to urge toward unification.

Based on the preceding discussion, a lot of implications can be derived from the values of σ and $\frac{\frac{f_T(N_T)}{N_T}}{\frac{f_M(N_M)}{N_M}}$. Any move to increase the value of σ or to reduce the value of $\frac{\frac{f_T(N_T)}{N_T}}{\frac{f_M(N_M)}{N_M}}$ will ease the current tension between Taiwan and Mainland China over the one-China dispute. In the following we will provide some of the many possible stabilizing factors. If Taiwanese put less

and Mainland Chinese put more emphasis on consumption (i.e., lower β_T and higher β_M), inequality in the living standards between both sides can then be leveled down (see Result 1). If the world price of W becomes higher and Mainland China's comparative advantage in the production of W strengthens (i.e., higher α_F and lower α_M), then Mainland China as a weaponry exporter can earn more from the world market of W and translate this additional income into more consumption goods for his people to improve their lives (see Results 1 and 4). If Mainland China catches up in his "average productivity" of labor forces with that of Taiwan (i.e., reduces $\frac{f_T(N_T)}{N_T}$), [18] inequalities in the normalized GNP per capita and the living standards between both sides can also be leveled down (see Result 1 and Result 4). All these will make Taiwan a less covetable target for unification. From the above implications we can make following comments. *Mainland China's policy and his effort toward a more open economy is a stabilizing factor. His persistent policy on population control and strict enforcement of that policy is a stabilizing factor too. Taiwan's restriction on capital investment in Mainland China and her people's becoming even more materialistic are destabilizing factors, but her efforts in the buildup of a military industry and diversifying her sources of weaponry supply is a stabilizing factor. End of the cold war and breakdown of the Eastern Bloc (most notably, the U.S.S.R.) are not necessarily good news either if stability in the region of Taiwan Strait is desired.*[19]

V. Limitations and Extension Possibilities of the Current Model

Despite of those implications discussed earlier, we still need to be cautious about the interpretation of the current model. There are limitations that must

be borne in mind if this model is to be of use for any practical purpose. There are also many ways that we can, with proper modifications, extend our model to incorporate a lot of deeper issues and other phenomena. Here we list and discuss several of them.

(1) For simplicity the production possibility curves for both economies are assumed to be linear functions of two commodities produced by only one input factor of labor force and can be generated by the following technologies of

$$C = g_c(N_c) = kN_c,\ W = g_w(N_w) = \frac{k}{\alpha}N_w,\ \text{and}\ f(N) = C + \alpha W = kN$$

where $k > 0$ and $N_c + N_w = N$with N_c and N_w be respectively the labor forces used in the production of C and W. In a more practical sense, the technology could be specified by functions incorporating multiple inputs and outputs like $\mathbf{y} = \mathbf{f}(\mathbf{x})$ with $\mathbf{x}$ standing for a vector of input factors and $\mathbf{y}$ a vector of final outputs. Various specifications of $\mathbf{f}(.)$ available in literature can be used to facilitate empirical testings and the $f(.)$ function used in this paper to indicate normalized GNP can be replaced by actual GNP (i.e., $\mathbf{p}^T\mathbf{y} - \mathbf{w}^T\mathbf{x}$ with $\mathbf{p}$ and $\mathbf{w}$ standing for price vectors of $\mathbf{y}$ and $\mathbf{x}$ respectively). Notice that the specification of $\mathbf{f}(.)$ can easily incorporate technologies of various returns to scales.[20]

(2)[21] The results obtained here crucially depend on the functional forms and all other assumptions adopted in the model. Obviously other specific functional forms of technologies and social utility functions could be made to facilitate empirical studies through, say, a computable general equilibrium model. And with such an attempt the production sector, the consumption sector and the government sector would need to be formulated explicitly so as to derive a market excess demand. Market clearance condition can then be introduced to

close the model.

As mentioned earlier we have hypothesized a social utility function for each economy to act as a public choice mechanism in determining the production and possible export of public goods. The only situation for a social utility function to be existent and free from the critique by Arrow's Impossibility Theorem on such an aggregation issue is when all agents in the economy are endowed with Gorman family preferences sharing identical marginal utility of income. In applied works such a social utility function can be treated as the behavioral equation or a utility function for the government since it, endowed with the power to tax and to spend (including the imposition of import tariffs or export subsidies), usually adopts various policies which necessarily have economy-wide influences over the whole society in order to attain certain economic and/or political goals. In a general equilibrium theoretical framework, such inclusion of the government is a nontrivial extension of the Arrow-Debreu model. See Shoven (1974), Shoven and Whalley (1973, 1974 and 1977) for such extension. Agenda too crucial to be determined by the (executive branch of the) government alone can be resolved by, say, a referendum. Then following the majority voting rule or other criteria we can roughly tell if such a proposal is likely to be accepted or rejected by the people. It is believed that the independence/unification issue will be one such crucial agenda, at least for Taiwanese, that the government alone can not dictate. Since the level of actual living standard is more appealing to the general public than the abstract notion of "public interest" as represented by the social utility function, we can confidently believe that if a referendum is to be called in to assist determination of the political fate of Taiwan, people will be more likely to vote according to their assessment of the (anticipated) value of the $< \frac{C}{N} >$ index and not the (anticipated) value of the social utility function and this justifies our use of

the living standard index $< \frac{C}{N} >$ in determining the general public's attitude toward this issue.

Since economic factors affect everyone and are often more easily felt by the people as compared with those other concerns, the major contribution of this paper will then be explicitly putting down necessary economic conditions for possible unification between Taiwan and Mainland China. Once we *accept* the adequacy of this model in dealing with such a difficult topic, all limitations that will be mentioned later are simply problems more of technicality than of substance and are not difficult to handle.

(3)[22] Economic integration can be achieved through negotiation and coordination between two governments on their policies toward mobilities of commodities and production factors (including labor forces) without political unification. Genuine political unification involves concerns far beyond economics and public choice theory is more appropriate here. Institutional issues such as how two different legal systems and two governments are to be unified and whether people are willing to relinquish the very legal rules they are familiar with and accept something else to regulate their daily lives later all need be fully addressed.

From economic viewpoints what really make nations independent economies are (i) restrictions on mobilities of resources (especially those across countries) imposed for political or economic reasons which include as examples restrictions on transfer of technologies, barrier of trade on imports to reduce trade deficit, restriction on import of foreign workers and many others; and (ii) differences in the political systems that dictate the way of how people perceive in the notion of property rights and the way of how resources are allocated. Land (as opposed to extracted resources which should be treated as different commodities or input factors) by nature is not mobile. Generally speaking,

mobility of resources within individual countries is relatively free as compared with that across countries.[23] Promotion and wide acceptance of the idea of free trade and evolution in financial markets (out of need, indeed) has gradually torn down barriers that forbid flows of most commodities and (financial) capital between nations. However, freedom of migration from one nation to another has never been recognized–let alone granting it to the people–by any nation in the name of national sovereignty.[24] Handling unification of different economies by summing up individual production possibility sets as the corresponding aggregate production possibility set for the unified economy drops barriers that could in any way hinder free flows of commodities and production factors–including, in particular, labor forces. Economic consequence of mobilities of resources, as suggested by the factor price equalization theorem, indicates that, as final goods move freely, factor prices at different locations will converge. Any possible differences that remain will account for transportation costs. This process helps extend the budget sets for parties involved in trade and thus makes each and everyone better off. Even though in a static model economic consequence of the unification of two political entities can also be achieved through trade between them, there remains a very important difference between these two situations on legal grounds that definitely affect the outcome in an intertemporal world. Movement of labor forces from one country to another brought about by trade often does not grant these workers the right to vote on internal issues of the latter country. Though migration is legally possible in most countries, it is nevertheless of very limited scale only. Only true unification allows massive migration of labor forces while still grants those migrants full legal rights. So as far as efficiency is concerned, unification seems to be a better option. But this phenomenon can not be fully dealt with by our highly aggregated model. Rigorously speaking, the current model

could not deal with factor mobility due to our oversimplified assumption on technology. Increasing-returns-to-scale technologies possibly can explain the currently observed flow of capital from Taiwan to Mainland China and flow of illegal immigrants from Mainland China to Taiwan.

As for the impact of the political system on the performance of the economy, it is reflected in its relative capability in achieving full economic efficiency. It is known that a free-market economy is often more efficient in resources allocation than a command economy because, in the former economy, market prices often do better in reflecting the relative scarcity of each and every resource and, in the latter economy, the central planning agency in charge of allocation decision making often lacks the computational and informational capabilities required to achieve efficiency.[25] Therefore, the result is usually that actual economic performance tends to be much closer to the efficiency boundary (for example, the production possibility frontier) in a free-market economy than in a command economy. In other words, suppose $f^*(N)$ represents the actually achieved and observable GNP and $f(N)$ represents the highest possible but often unobservable GNP dictated by the production possibility frontier, $\frac{f^*(N)}{f(N)}$ is very likely to be higher in a free-market economy than in a command economy. So even if a value for the situation index σ has been obtained, readers are advised not to jump too quickly to any conclusion regarding the political fate of Taiwan.

(4) A commonly seen phenomenon in today's political arena is that most important decisions (including the choice of the social utility function) are made by a minority that forms the core of power (be it a president, a prime minister, a dictator, a junta, a parliament or whatsoever) and special interest groups often can exercise great influences (often much higher than what they actually represent in the society) over the resources allocation processes towards their

favor by buying their ways into that core through the offering of economic interests to its members in exchange for political favors and much greater long term economic returns to be handed over later. Sometimes interest groups can even send their own people into power through elections or any other feasible measures. Such actions are always "legal" as long as these interest groups can keep clinging to the power core or members they support can remain staying in power. In our context, the decision of independence or unification may largely be made (or to be made) by the (various oligopolistic) power core(s) in the ruling parties (the K.M.T. on Taiwan and the Communist Party in Mainland China) and some interest groups from both sides formed by a few economic tycoons backed with their enterprises. Literatures on voting, committee, political lobbying and rent seeking behaviors can be directly applied here.

A special interest group worth mentioning is the one serving the business interests. Businessmen are keen in pursuing relative comparative advantages and are sensitive to political risks. However, the major concerns are still their own interests. Trade relationship on the one hand creates a kind of leverage that one economy can exercise its political and economic influences against its trading partners; on the other hand, though, leverage of this kind can sometimes backfire as it undermines the very foundation for cooperation. Business interests in the private sector provides another kind of leverage and which side it will turn against or stand for depends on the relative importance this particular business interest group represents in each economy that is involved. Take for example Taiwanese business interests in Mainland China. When confronted with government opposition against direct investment into Mainland China, they responded with confident words about their readiness to take political risks there and their capability to literally prosper without assistance

from the Taiwanese government. Now after billions of dollars have been put into the Mainland (which definitely will not be considered as sunk costs by those businessmen) and with the understanding that their role as capital investors can be easily replaced by other foreign investors from Europe, the U.S. and Japan coveting the enormous market and cheap labor supply out there, they now turn their back to push the government around.[26] From all these we can understand why the Taiwanese government and the Taiwanese business interest group were so helpless when the tragic Lake Qiandao incident occurred and why the touring boycott was doomed to fail.[27] The above example also reminds us of the game-like interactive nature of the relationships between governments and business interest groups in Taiwan and Mainland China which can not be properly dealt with in our model.

VI. Conclusion

In this paper we have proposed a simple model on Taiwan and Mainland China linking together differences in their production comparative advantages in different commodities, differences in attitudes toward consumption (reflected in their respective social utility functions) and GNPs per capita. Under the mild assumption that peaceful unification could take place only if it is beneficial to both sides, we then proceed to see how changes in these factors could possibly affect the political stability on both sides of the Taiwan Strait over the issue of Taiwan's independence from or unification with Mainland China. The results suggest that separation or unification achieved through peaceful means or tense political instability are all possible. Factors that may influence the developments are discussed and later related to possible effects of recent progresses made in the relationship between the two Chinas and in today's global politics. Though the model is very crude, all our results are

refutable and can be tested. We believe that not only more researches along this line are still needed, constant efforts are also needed to check on future development of the relationship between the two Chinas as we propose here on a regular basis. It is sincerely hoped that this paper can somewhat call to the attention of our peer economists on this important and urgent issue.

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Note

1 According to Professor John Kenneth Galbraith in a talk on November 14, 1992 at the National Central Library, the idea former U.S. President George Bush claimed that the United States (under his leadership) has won the cold war is nonsense. It was people's command, out of anger from the government's never fulfilled promises and ignorance of their long time needs, that toppled the Eastern (Communist) Bloc. The author certainly could not agree more.

2 Local scaled tension does exist in places like the former Yugoslavia, but a large scale military conflict that may drag in several countries does not seem likely.

3 See as an example Kao, Lee and Lin (1992) and references cited there.

4 Chu (1993) is such an attempt. Though no solid conclusions were provided in that paper regarding when or if Taiwan should seek independence from or unification with Mainland China, he does point out many important aspects and directions that we should look into if this issue is to be seriously contemplated and studied. Professor Steven S. Kan in his

discussion with the author also points out some important methodological aspects that are worth exploring in tackling this political issue, but probably along lines different from what we have adopted here. Professor J. Patrick Gunning has similar concern too.

5 For example, *Economics* by Barron and Lynch (1989:11-16), *Economics* by Boyes and Melvin (1991:34-44). It is worth noticing that the notion of comparative advantage can be traced back to (at least as early as) Adam Smith. Ricardo's theory of comparative advantage precedes (and forms one of the cornerstone of) modern theory of international trade and general equilibrium theory. See Part II (i.e., Chapters 4-7) of Takayama (1972:107-211) for more details.

6 Our treatment of the $f(.)$ function allows us to incorporate inputs other than labor force; for example, we may include capital K as an input and make the production possibility frontier into $C + \alpha W = f(K, N)$. In this paper, however, we shall confine ourselves to the consideration of labor force only.

7 Though in a more realistic setting we should include multiple (definitely more than two) commodities in the model, only two are considered here out of the need for simplicity. What is important here is the differences in the production comparative advantages of various commodities.

8 Technically, $\delta \equiv \frac{N}{N^*}$ represents the production readiness of the population (i.e., the proportion of the whole population that can be fully transformed into effective labor forces to be used in production). δ can represent the effect of education with higher δ implying lower rate of illiteracy, it can represent the demographic composition of the population with higher δ implying higher proportion of working age population, it can also represent the impact of any natural disaster such as a devastat-

ing earthquake or any man-made misfortune such as a war with lower δ implying greater losses in human lives, it can also be an index of the employment rate of the economy. $\delta = 1$ then suggests that the economy is operating at its full capacity. By allowing δ to vary freely our model can be easily modified to allow factor mobility with $\delta < 1$ meaning export and $\delta > 1$ meaning import of labor forces. Such treatment on labor forces can be similarly applied to other input factors.

9 One can also interpret it as the social welfare function or the representative agent's utility function.

10 Rigorously speaking, a cultural tie is often a good basis but not a necessary condition for a political tie. The United States of America is an example. What we have observed today strongly suggests that stubborn insistence on a particular cultural value could be a destabilizing factor in a society where diversity should be merited. This is an experience we the human being have learned in the hard way for thousands of years and come to realize that all of us have got to live together no matter we like it or not. To make the world a much bearable place to live, we had better learn to be more tolerant.

11 They do have differences in their assessments (maybe the word *beliefs* is more appropriate) of the political and military risks involved in Taiwan's independence movement. Yet neither party has succeeded in conveying to the people exactly how its assessment was made and why the people should buy either idea and put their trusts on it. There is an economic equivalence of such situation—a feasibility report without an adequate cost-benefit analysis. Needless to say, all this is just the author's opinion.

12 Frankly speaking, this is exactly the hard and most controversial part of this political issue as indicated by Arrow's impossibility theorem. Also

see Chu (1993). However, despite such a difficulty, political decisions needed to be made are being made everyday. What is relevant here is simply finding a criterion that can be put into the political agenda and be used to make appeals to the people through whatever social choice mechanism (e.g., a referendum) accepted by the society.

13 From economic viewpoints, it does not seem to make any difference whether Taiwan stays at the status quo (i.e., postpones the decision of unification or independence) or formally declares her political independence from Mainland China. High ranking government officials in efforts to renounce the idea of independence often make remarks contradicting realities. When asked if Taiwan should declare independent, their standard answer is always that such movement will hinder our current (official or unofficial) relationships with other allies. On other occasions, however, they often proudly pronounce that it is our economic might that wins (almost) everything (including, of course, diplomatic ties). These honorable officials seem unaware that the brand name our products carry overseas is M.I.T. (Made in Taiwan) rather than Made in R.O.C.—the substance is in the products, not the "brand name".

14 This assumption suggests that Taiwan has the most advantage in producing C, less for the foreign sector and least for Mainland China. As for the production of W, this order is reversed.

15 It is worth noticing that joining two economies together either by unifying them into an economy (illustrated by summing together their respective production possibility sets into an aggregate production possibility set for the new economy—an approach proposed by A. P. Lerner) or by trade bear different economic consequences. In case that commodities (including production inputs and outputs) are allowed to be freely mo-

bile across economies, there is no difference between these two ways of economic integrations as far as the well-beings of individual consumers in the two economies are concerned. This claim is simply a rehearsal of well known results from modern general equilibrium theory and in fact it was this stand taken up by classical trade theorists which blossomed during 1930s and 1960s under the titles of input-output analysis, activity analysis and general equilibrium (which includes trade theory). The development of concave programming techniques, topological properties of convex sets and separating hyperplanes played a pivotal role here. Again see Part II, especially Chapter 7, of Takayama (1972: 107-211) for more details. In reality, however, labor mobility from one nation to another is always restricted no matter how free a trade relation can be. Together with constraints imposed on mobilities of other factors, such restrictions has great impact on the consequences and the treatments of factor unemployment. This also makes economic consequences under unification (where free factor mobility between Mainland China and Taiwan is assured) different from those under independence with trade (where labor mobility between Mainland China and Taiwan is prohibited and mobility of other factors is largely constrained). The classical treatment is unsatisfactory since, in its general equilibrium framework, it either presumes free factor mobilities (including mainly labor forces) implicitly implied by the Lerner's treatment of the world production possibility set or it presumes constant-returns-to-scale technologies rendering the factor mobility issues unimportant and irrelevant in any normative concern (an implication of the factor price equalization theorem). Such dissatisfaction may explain why one recent advancement in trade theory is focused on increasing-returns-to-scale technologies. Since the main purpose of

this paper is to demonstrate the importance of a feasibility study on the independence/unification issue facing contemporary Chinese and how to proceed, we choose not to burden the readers with technical complexity which will necessarily arise from incorporation of factor mobilities. However, we are fully aware of its limitation. See Section V for further elaboration on the limitations and extension possibilities of our model.

16 In our model it is the political leader's ideology that matters. Use of the word "ideology"is merely for convenience and not intended to be judgmental. The exact value this coefficient of ideology λ may take is most likely to be determined by political maneuvers jointly exercised by the two governments when both sides agree to be unified with each other. This will then determine the propensity to consume $\hat{\beta}$ and in turn the defense buildup of the new economy after unification is completed. Nevertheless, we must confess that the choice of this particular social utility function is rather arbitrary. See Section V for further elaboration on our interpretation of the social utility function. Technically speaking, we can use a social welfare function (in particular, a Negishi-type social welfare function $W(u_1(\mathbf{x_1}), ..., u_N(\mathbf{x_N})) = \sum_{j=1}^{N} \alpha_j u_j(\mathbf{x_j}))$ instead of a social utility function and thereafter, following the same logic as demonstrated in this paper, pursue in a similar way to obtain necessary conditions for either Taiwan or Mainland China to accept (or reject) a peaceful unification proposal. From such conditions, we can develop possible economic and political implications as our Section IV shows. Obviously, the Cobb-Douglas social utility function adopted here is much easier.

17 The rationale here is obvious. If the "cake" allocated to each side is larger when they work together than each can independently make, both sides

will have incentives to join together. If working together cannot guarantee each a larger cake than if they each can independently make, they certainly will not choose to unify each other. As usual, politicians can always appeal to a larger cake to win supports. But they can never solve the equity issue (i.e., the distribution issue) enough to please everyone.

18 Notice that, under our representation of the production technology, it is not the ordinary sense of average product of labor.

19 We must recognize that all conclusions made here are, at most, merely refutable conjectures waiting to be tested more rigorously. Mainland China's policy and effort toward a more open economy includes attraction of foreign investments (including that from Taiwan, of course). This economic policy together with his strict population control policy will help narrowing both the gaps in GNP per capita and living standards by reducing $\frac{\frac{f_T(N_T)}{N_T}}{\frac{f_M(N_M)}{N_M}}$, and this will make his production in C more cost efficient and thus reduces α_M as relative to α_F (i.e., increases $\frac{\alpha_F}{\alpha_M}$). Such policy will increase β_M too because incentive schemes (including recognition of private ownership of property rights) must be adopted. Taiwanese being more and more materialistic (i.e., β_T getting higher) today is probably a reality and this will make Taiwan a more covetable target. Taiwan's restriction on capital investments in Mainland China slows down the reduction in $\frac{\frac{f_T(N_T)}{N_T}}{\frac{f_M(N_M)}{N_M}}$. End of the cold war leaves weaponry producers around the world (especially those in the Eastern Bloc) eager to look for outlets for their products and productivity in this area has to be converted into production of C as soon as possible since weaponry is no longer that important now. Both these two effects will decrease α_F. Taiwan's effort for security and self-dependence in her weaponry supply will stop or slow down the declining of α_F. This result may seem puzzling to those who

worry about a possible arms race between Taiwan and Mainland China which in turn will raise the possibility of a military confrontation. But from economic viewpoints that is not likely the case—at least as long as Mainland China sticks to his policy on economic reforms. The reason is that the lower α_F is, the more severe competition Mainland China has to face in the world market of weaponry which he heavily relies on in securing the influx of extra resources urgently needed to support his reforms. Taiwan's self-dependent and self-sufficient policy on her weaponry supply (as a big buyer) certainly helps ease the severity in such competition and, therefore, indirectly assists Mainland China's transformation toward a more market-oriented economy. Given Taiwan's own experience that progresses in economic reforms necessarily ignite the people's desire for more political freedom which in turn enhances the chance of success in economic reforms, we can hopefully anticipate that any progress made in the economic arena will further bring up the values of β_M and $\frac{f_M(N_M)}{N_M}$ and lower down the value of α_M (as relative to α_F) making peaceful separation even more likely to sustain.

20 This can be done by extending Varian (1992:16). To see this, let $f(.) : R^n \rightarrow R$ be a legitimate production function and $F(.) : R^{1+n} \rightarrow R$ be a function defined by $F(z, \mathbf{x}) = z^k f(\frac{\mathbf{x}}{z})$, then for $t > 0$ we have $F(tz, t\mathbf{x}) = t^k F(z, \mathbf{x})$. This suggests that we can "create" production functions of any returns to scale from any production functions, in particular when $k > 1$ that indicates increasing returns to scale. Such technique can be applied to extend the current model to incorporate multi-period dynamic issues such as capital investment. For example, let $\mathbf{x}$ be variable inputs and z be the fixed input. Different industries may have different or same input factors as the fixed variables in their production processes

in the short run.

21 See Footnote 16 for cross reference.

22 See Footnote 15 for cross reference.

23 But it is not always the case. Mainland China once put a very strict rule to regulate the mobility of his own people. Centrally controlled job assignment and food rationing were the main tools used to achieve that politically motivated goal. It was not until quite recently when economic reform was desired did it be lifted.

24 So significantly contrasted to the breakup of the former Soviet empire, the recent proposal of European unification is a new trial, though. Its success or failure will necessarily have great impact on future dealings with such similar attempts.

25 In a conversation with Dr. Man-Chung Ng, he cited Professor Henry Wan's opinion emphasizing the computational complexity required in a command economy in achieving economic efficiency. Incidentally, this point has long been recognized by Austrian school economists.

26 There were situations which investors could not have fully grasped to facilitate the making of proper risk assessments before they started their ventures into Mainland China and such situations would later prove too compelling for them to resist turning for help from their very own governments. Such practice is certainly common to all "rational" investors around the world. See Dowell (1994) for an example of such an unanticipated and certainly unexpected incident facing investors venturing in Mainland China. Although this practice is not particularly welcome to the general public in Taiwan, it is nevertheless understandable. After all, the government is always the insurer of the final resort which means that the government can exercise its enormous power to intervene into

the resources allocation process in favor of certain interest group at the expense of the public. It is then no wonder that political maneuvering should become the most important instrument for business interests in their daily operation.

27 See the No. 5 Issue of *Observation Bi-Weekly* for a series of reports on issues related to this tourist incident(千島湖事件). Also see Morris(1994).

References

Barron, John M. and Gerald J. Lynch

1989 *Economics.* second edition. Boston, Massachusetts: Richard D. Irwin, Inc.

Boyes, William and Michael Melvin

1991 *Economics.* Boston, Massachusetts: Houghton Mifflin Company.

Chu, Cyrus C. Y.(朱敬一)

1993 〈國家認同的經濟分析〉，中央研究院中山人文社會科學研究所《人文及社會科學集刊》6(1)：75-95。

Dowell, William

1994 "Dancing With Wolves," *TIME International—the Weekly Newsmagazine* 144(10): 40, September 5.

Kao, Charles H. C., Joseph S. Lee and Chu-Chia Steve Lin(高希均、李誠、林祖嘉)

1992 《臺灣突破—兩岸經貿追蹤》。臺北：天下文化出版股份有限公司。

Morris, Nomi

1994 "Accident or Cover-Up?" *TIME International—the Weekly Newsmagazine* 143(17): 24, April 25.

Observation Bi-Weekly

1994 《觀察雙週刊》第5號刊。臺北：觀察文化事業股份有限公司發行，4月25日出版。

Shoven, John B.

1974 "A Proof of the Existence of a General Equilibrium with ad Valorem Commodity Taxes," *Journal of Economic Theory* 8(1): 1-25.

Shoven, John B. and John Whalley

1973 "General Equilibrium with Taxes: A Computation Procedure and an Existence Proof," *Review of Economic Studies* 40(124): 475-490.

1974 "On the Computation of Competitive Equilibrium on International Markets with Tariffs," *Journal of International Economics* 4(4): 341-354.

1977 "Equal Yield Tax Alternatives: General Equilibrium Computational Techniques," *Journal of Public Economics* 8(2): 211-224.

Takayama, Akira

1972 *International Trade—an Approach to the Theory.* New York, N. Y.: Holt, Rinehart and Winston, Inc.

Varian, Hal R.

1992 *Microeconomic Analysis.* third edition. New York, N. Y.: W. W. Norton & Company, Inc.

由經濟觀點看海峽兩岸就統獨意念引發之政治穩定問題

王卓脩

摘要

在本文中我們用一個簡單的國際貿易模型，來探討臺灣地區與大陸在生產面之比較利益、消費傾向、平均國民所得等各方面的不同所可能帶來對海峽兩岸就統獨爭議引發政治情勢變動之可能影響，也推導出兩岸在政治與經濟上欲眞正統一整合時所應考慮到的必要條件。雖然本文的模型相當簡單，但仍可由其中推出許多頗契合現實政治情勢的推論來。最後我們也就本文中可加以推廣或有所限制的地方加以說明。