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**ETHNIC FRAGMENTATION AND
THE SIZE OF THE PUBLIC SECTOR:
THEORETICAL AND
EMPIRICAL PERSPECTIVES**

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Abstract

This paper investigates the possible link between ethnic fragmentation and the size of a country's public sector, an area that has been rarely touched upon by past and contemporary studies on public policy. It explores the theoretical basis for the existence of such a relationship and finds supportive evidence in the empirical data of the degree of ethnic fragmentation and the level of public expenditure. Finally, it discusses the real-world complexity of the subject matter due to the existence of countervailing influences from preferential policies and decentralization which themselves represent possible State responses to exigencies engendered by ethnic fragmentation.

1. The Growth of the Public Sector

Since the end of World War II, there has been a secular process of government budget expansion in the advanced capitalist Western European and North American democracies, with a tremendous expansion of State influence and intervention in the economy.¹ Attempts to account for this expansion have spurred a considerable number of theories from the demand- as well as

¹ It should be mentioned that a recent paper by Karras (1996) has pointed out that the world government size has slowly decreased from 16.3 per cent in 1960 to 14.6 per cent in 1985 and that North America and South America also experienced almost steady decrease over the period concerned. Only in Africa was there an almost steady increase, while Asia and Europe followed more complicated patterns. This, however, needs not contradict the previous observation because the data that Karras utilized - Penn World Table (Mark 5) of Summers and Heston (1991) - are basically derived from the benchmark studies of the ICP (United Nations International Comparison Program) which, as Summers and Heston themselves pointed out, do not include transfer payments and are inadequate in the coverage of public expenditures on education, health and recreation (Kravis, Heston and Summers, 1982; Summers and Heston, 1991).

supply-side perspectives. Table 1 gives a summary of such demand- and supply-side theories of public sector expansion. From a political economy perspective, such theories, which extend beyond the short list in Table 1, would reflect diverse orientations which are pluralist, neo-Marxist and institutionalist in outlook. While the demand theories consider the externally generated demands of groups and classes for spending, the supply (or State-based) theories look at the characteristics of the State that autonomously generate public expenditure.²

Nevertheless government expansion is by no means limited to advanced Western democracies. A similar process also occurred in countries characterized as "developing", many of which achieved independence after World War II. Additional dimensions, some being country specific, require consideration when the countries studied include both rich and poor, north and south. It is in this context that particular attention is worth paying to ethnic diversity as a correlate of public policy variations, especially in terms of levels of, as well as growth in, public expenditure.

2. The Factor of Ethnic Fractionalization

Taking ethnic fractionalization as the explanatory variable, its possible effect on the size of the public sector is determined by the way it influences the process of public decision making. From a theoretical perspective, the degree of ethnic fractionalization should have an inverse relationship with the scale of government. McCarty (1993) observed that considerable variations in the size of the public sector (the level of government expenditure)² may result from differences

² For a brief summary of these in terms of "laws", see Lane and Ersson (1990:146-7). Among the demand-side theories are suggestions that sudden social shocks necessitate budgetary shift-points towards much higher levels of public spending (Peacock's and Wiseman's law); socioeconomic development of necessity requires public resource allocation (Wagner's law); increasing affluence implies larger budgets (Wilensky's first law); the dominance of the left in society or government means budget expansion replacing market mechanisms (Schmidt's law); a strong position for the right in government is a negative determinant (Castles' law); collectivist ideologies promote public sector expansion (Wilensky's second law); technological development pushes industrial societies more towards the public sector to balance the private sector (Galbraith's law); welfare spending by the neighbouring state implies a demand for welfare programmes at home (Tarschys' law); the increasing openness of the economies of the countries of the world creates a demand for budgetary stabilization of the erratic fluctuations of markets

in the degree to which a country's citizens share preferences regarding public spending. Demographic diversity can bring about diverse preferences which make agreement on provision levels difficult.

If publicly provided goods are supplied in uniform quantity to all residents, welfare losses occur for individuals whose willingness to pay for a good does not equal its marginal cost at that quantity. Therefore, the more diverse preferences are, the more inefficient is uniform provision of goods. (It is of course possible for governments to provide different quantities of goods to different individuals, but, as Wallis and Oates [1988] pointed out, they are likely to incur administrative costs in doing so, and in practice publicly provided goods are usually provided in uniform quantity, or on uniform criteria, to all residents.)

Public sector expenditure levels may be determined by negotiations among various factions rather than by the median voter. Since the median voter model assumes that elections involve single spending issues and that preferences are single-peaked, it is most applicable to a local referendum on a specific issue, but in the context of the public sector as a whole, the concept of a single decisive voter may be a fiction (McCarty, *op.cit.*). Negotiations are more likely to be lengthy and costly if preferences are relatively diverse. Consequently, voters may try to minimize these transaction costs by choosing lower levels of public spending. Thus it can be hypothesized that the higher the degree of ethnic fractionalization, the greater the difficulty of reaching collective decisions and therefore the smaller the expected size of government.

(Cameron's law); and, all political systems whether capitalist or socialist face the same policy demands for public programmes (Pryor's law). Among the supply-side approaches are hypotheses that public sector growth is a function of bureau size maximization (Downs' law); budget-making must mean oversupply (Niskanen's law); public spending involves bureaucratic waste (Tullock's law); public sector productivity is negative, claiming more resources every year for the "same" output (Baumol's law); budget-making rests upon fiscal illusions about the relation between cost and benefit (Oates' law); budget-making is asymmetrical meaning that those benefiting from public sector expansion are strategically stronger than those that have to pay (Kristensen's law); public officials whether politicians or bureaucrats are motivated by a private interest function tied to the size of the budget (Breton's law); and, it is difficult to close the gap between benefit and cost in the public sector (Wicksell's law).

3. Sample Description and Classification

The sample used in this paper includes a total of 119 countries, although for reasons which will be explained later some of them will be excluded from analysis at certain stages as the investigation proceeds. Besides using the total sample for analysis, four different sets of countries are established according to the level of affluence reflected in their gross domestic products (GDP) per capita, to observe the variation in the influence of ethnic diversity on the level of public spending between economically less affluent countries and those more affluent ones. Intrinsic in such categorization is the assumption that the level of affluence of a society gives rise in turn to a different system of political regime (the degree of democratization, the emphasis on welfare spending, fertility and mortality rates, age structure of the population, tax base, *etc.*) which has a direct influence on public expenditure policy. As in all types of categorization, the boundary between categories can always be said to be somewhat arbitrary. However, the grouping of countries in this case is done as far as possible to conform to the current categorization made in World Bank's *World Development Reports (WDRs)*, though different sources and nature of data utilized mean that the exact boundaries of income brackets used here may not always coincide with those in the *WDRs* (see footnote 3 below).

The four categories of countries established here are the low-income group comprising those countries each with a GDP per capita of US\$610 or lower at 1991-92 current prices; lower-middle-income countries each with a GDP per capita higher than US\$610 but below US\$2,500; upper-middle- and high-income developing countries each having a GDP per capita of US\$2,500 and above; and lastly, the "Western" industrialized welfare states.³

Apparently such categorization has actually gone beyond a simple measure of GDP per capita, especially in the case of the boundary between the last two categories. Singapore, for instance, which has a GDP per capita higher than some countries in the final category, is grouped

³ The definition of the low-income group as equal to or below US\$610 follows that of the World Bank's *World Development Report 1992*. The boundary between lower-middle- and upper-middle-income groups also follows as close as possible such categorization of countries in *WDR 1992*. The category of upper-middle- and high-income developing countries is inclusive of those with US\$7911 and above (defined in *WDR 1992* as high-income) that are too few to form a separate group after excluding the advanced industrialized countries.

under the "upper-middle- and high-income developing countries"⁴ according more to economic structure than income per capita *per se* (see the *WDRs*). On the other hand, the final category should be considered a special group by itself, defined more by its overall economic structure, *e.g.* the peculiar "welfare state" system that marks them apart from other high-income countries like Singapore, Taiwan (Republic of China) and South Korea, than by merely an income per capita measure. It is for this reason that Portugal and Greece, which have income per capita lower than many in the "upper-middle- and high-income developing countries" category, are in fact grouped under this final category. The term "Western" has more a socio-structural connotation rather than geographic, since the United States of America, Australia and New Zealand also come under this category. It coincides more or less with the OECD group, including Japan, but excluding the new member of South Korea. The high-income oil exporters of Qatar, UAE, Bahrain, Oman, Libya, Kuwait, Saudi Arabia and Brunei are excluded from both the "upper-middle and high-income developing countries" and "welfare states" groups due to their peculiar economic structure, in line with the earlier practice in the *WDRs*. Also not included in these four categories are the post-Communist states whose politico-economic structures are still in a state of transition. The sources of data are mainly IMF's *Government Finance Statistics Yearbooks*⁵ and CIA's *World Factbooks*⁶. To enable a better comparison with the few previous study related to the subject, in particular McCarty (*op.cit.*), the data for 1991 are

⁴ All data for Cyprus, which is also included in this group, are those of the Greek sector (Republic of Cyprus) only. With 60 per cent of the land area and more than 80 per cent of the population, it is separated from the Turkish sector by a narrow UN buffer zone. The two areas are *de facto* two separate states since the Turkish invasion in July 1974 and the creation of the breakaway state of the Turkish Federated State of Cyprus in 1975 (renamed Turkish Republic of Northern Cyprus in 1983) which has been recognized only by Turkey. A substantial portion of the economy of this Turkish-Cypriot state has normally been underwritten by Turkey from whom, for instance, it asked for a multibillion-dollar grant in 1991 to help ease the burden of its economic crisis. Only 2.1 per cent of Greek-Cypriots, who constitute 78 per cent of the total island population, still live in the Turkish sector, while 0.3 per cent of Turkish-Cypriots are in the Greek sector. For the degree of ethnic diversity of the island as a whole and the two sectors separately, see Table 1 in Yeoh (2001). Cyprus' EF Index shown in Table 7 below is for the Greek sector alone.

⁵ *Government Finance Statistics Yearbooks*, International Monetary Fund, Washington, D.C.

⁶ *The World Factbooks*, U.S. Central Intelligence Agency, New York:Maxwell Macmillan/Brassey's.

used, though where data are unavailable for this particular year, those of an earlier year closest to it are employed, with variations usually within one to two years. Table 2 below shows the national averages of GDP per capita of all countries in the sample and in addition, of different sets of countries and the variations within these sets themselves.

It can be observed in Table 2 that there are profound differences both between and within country categories. The average GDP per capita of the advanced industrialized countries is almost three times that of the upper-middle- and high-income developing countries. The differences are even greater between the three sets of developing countries - the average GDP per capita of the upper-middle- and high-income group is nearly five times that of the lower-middle-income group which in turn represents more than three times that of the low-income group. While this reflects the high degree of heterogeneity among the so-called "Third World" countries, the coefficient of variation (CV) further indicates this within the different country sets. Derived by dividing the standard deviation by the mean, the coefficient of variation is generally taken to indicate substantial variation if it has a score of more than roughly 0.25.⁷ Among the four sets of countries, only the category of advanced industrialized countries has a CV of lower than 0.25, though its value is substantially high mainly due to the inclusion of the relatively low-income members of Portugal and Greece. While all the three groups of developing countries show substantial income variations, that of the upper-middle- and high-income category is particularly profound due to the inclusion of countries (*e.g.* Singapore and Nauru) whose income levels are equivalent to or even surpass those of some advanced industrialized countries.

The higher degree of heterogeneity among the Third World countries is also a reflection of the different paths of economic development they have followed (see, *e.g.*, Reynolds, 1985). More details of individual country variations can be seen in Table 3 where GDP per capita figures are given from high to low for each country set and a comparison can be made with the mean. Different levels of economic development, as reflected here in the different levels of GDP per capita, have a profound influence on many factors that directly affect public spending, such as political structure, welfare system, age composition of the population, fertility and mortality rates as well as the tax base. It is evident in Table 4 where the same pattern of variation is

⁷ See Lane and Ersson, 1990:58.

reflected in the case of public expenditure per capita among and within these four categories of countries (details of individual country variations are shown in Table 5). While in this case all categories show substantial within-group variations ($CV > 0.25$), the CV of each of the three groups of developing countries is much higher than any of the advanced industrialized countries. Between groups, the average public expenditure per capita of the advanced industrialized countries is again almost three times higher than that of the upper-middle- and high-income developing countries that amounts to five times that of the lower-middle-income groups which, in turn, is more than four times that of the low-income category. In other words, a near identical pattern of between- and within-group variations is found in both public expenditure and GDP per capita. The way of categorization as employed here is useful to enable a more in-depth investigation into the relationship between public expenditure and ethnic fractionalization, as will be evident below.

4. Ethnic Fragmentation as a Correlate of Public Spending

To investigate the possible link between ethnic diversity and government size (as hypothesized earlier on page 4, that the cross-national relative size of government is negatively related to the extent of ethnic diversity), an index of ethnic fractionalization (EFI) is employed here as a measure of a country's degree of racial, ethnolinguistic and ethnoreligious fragmentation⁸.

The characteristics of EF in the four country sets (Table 6) indicate a steady increase in

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$$F = 1 - \sum_{i=1}^n \left(\frac{n_i}{N} \right) \left(\frac{n_i - 1}{N - 1} \right)$$

where n = the number of members of the i th group and N = the total number of people in the population (Yeoh, 2001:8). The index is constructed through the computational procedure of Rae and Taylor's index of fragmentation (F), defined as the probability that a randomly selected pair of individuals in a society will belong to different groups (Rae and Taylor, 1970:22-3). The index varies from 0 to 1. The value is zero for a completely homogeneous country (the probability of belonging to different groups is nil). The value 1 occurs in the hypothetical society where each individual belongs to a different group.

the average degree of ethnic fractionalization from the advanced industrialized countries to the low-income countries. However, an exactly reverse pattern can be observed in the case of within-group variation, with CV declining from the advanced industrialized countries to the low-income countries. Combining these two observations, Table 6 seems to suggest that EF is inversely related to GDP per capita, and given the direct relationship between public expenditure and GDP per capita shown by Tables 4 and 2, EF should also be inversely related to public expenditure.⁹ Details of individual country variations are given in Table 7. The relationship between public expenditure and EF for the four separate groups of countries is further illustrated graphically in Figures 1 to 4.

To find out the relationship between public expenditure and EF an analysis using correlation coefficient (r) is carried out. Besides finding the relationship between EF and public expenditure per capita (PCE), another measure of public sector size is also employed, *i.e.* public expenditure as a percentage of GDP (E/G). The results for both are shown in Table 8.

For the total sample of all 119 countries, there is substantial negative correlation between EF and public expenditure both in per capita form and as a share of GDP. For the low-income countries the coefficient suggests high negative correlation between EF and public expenditure in both forms. However, no high correlation is found for the other three country sets, though EF and the share of GDP devoted to public sector expenditure are substantially correlated among the advanced industrialized countries.

Looking at the characteristics of the individual countries in each of the country sets, however, reveals that certain members of these groups have peculiar characteristics and their inclusion may have affected the results of the analysis. First, among the advanced industrialized countries, Portugal and Greece both have a GDP per capita far lower than the other members, in fact even lower than the top five countries in the group of "upper-middle- and high-income developing countries". Their inclusion is mainly due to their being EU and OECD members and

⁹ Although the intergroup comparison is based on the mean value, the lower CV for the lower income groups (which means more uniformly higher EF) should lend support to this observation.

the "welfare state" characteristics in their public policies. The only "non-Western" member of the group, Japan, though undisputedly an advanced industrialized country, nevertheless is very different in its public policy approach, *e.g.* in welfare, and has a socioeconomic and even political structure quite distinct from the other members of the group.

Among the "upper-middle- and high-income developing countries", the three East Asian newly industrializing countries (NICs), the so-called "tiger economies" - Singapore, Taiwan (Republic of China), South Korea - stand out as entities very much different from the rest of the group, with income level, as well as socioeconomic structure, fast approaching those of the advanced industrialized countries. A fourth "tiger economy", Hong Kong, has not been included in the sample since it is neither *de jure* nor *de facto* an independent political entity.¹⁰ Nauru, the small state on a great phosphate rock island in the Pacific, is again a country like no others. It has an economy totally dependent on the export of phosphates, which gives Nauruans one of the highest income per capita in the Third World. This peculiar nature of its economy makes it more in league with the group of high-income oil exporters - Qatar, Kuwait, Saudi Arabia, *etc.* - which have been excluded from all the four sets of samples. Another country that may not fit well with the others in this group is Israel, which is distinctive in that it has a defence expenditure-to-GDP ratio (12.1%) far exceeding the others (the closest one, that of Cyprus and of Malaysia, is only 5%).

The ratio of defence spending to GDP also marks Iraq (18%), Iran (15%) and Angola (14.3%) apart from the others in the lower-middle-income group of countries, and Yemen Arab Republic (17.6%) from the rest in the low-income category. None of the other countries in these two groups has defence spending exceeding 10 per cent of GDP. Extensive public expenditure is in general terms usually observed in either welfare states that have been given a special category in the present analysis or "in those Leviathan states where for one reason or another military expenditures are the reason for comprehensive public budgets" (Lane and Ersson, 1990:114). The five countries noted above are typical examples of the latter. Nevertheless, to exclude defence expenditure completely, as is attempted later and represents the approach adopted by

¹⁰ On the contrary, Taiwan, the Chinese province under the control of the exiled Republican government since 1949, is a *de facto*, though not *de jure*, independent country.

some researchers, may also lead to inaccurate results in this case since defence spending can be part of the expenditure that comes under the influence of a country's degree of ethnic fragmentation through the latter's implication for national security concerns especially in countries with borders bisecting nationalities¹¹.

Dropping Portugal, Greece and Japan from the group of advanced industrialized countries, Nauru, Israel and the NICs from among the upper-middle- and high-income developing countries, Iraq, Iran and Angola from the lower-middle-income group and Yemen Arab Republic from the low-income category, the analysis is reconducted and the results are presented in Table 9.

The above results indicate clearly a significant negative correlation between EF and public expenditure per capita (PCE) or such expenditure as a share of GDP (E/G). The association is particularly strong for the low-income countries with a negative r of almost 0.8 for PCE and more than 0.7 in the case of E/G. This is followed by the lower-middle-income group and the upper-middle- and high-income developing countries with a negative r of around 0.6-0.7 in the case of PCE. For E/G the lower-middle-income group shows a substantial negative association with the magnitude of around 0.5, though the upper-middle- and high-income countries register a rather low value. The correlation between EF and PCE for the advanced industrialized countries is negative and considerable ($|0.5|$) though somewhat lower than the three sets of developing countries. However, a higher value of nearly 0.6 (again negative) is registered for E/G.

The persistently negative r for all country sets suggests that ethnic fragmentation increases the difficulty in reaching agreement on public expenditure allocation that satisfies all fractions and thus a higher EF tends to be associated with smaller expenditure. The higher r for

¹¹ Borders that bisect nationalities are usually more troublesome than those that follow national demographic divides because the former entrap parts of nationalities within the boundaries of states dominated by other ethnic groups (van Evera, 1994:22). Revanchist tendencies of the adjacent truncated nations - implicit or expressed - often serve to fuel potential separatist regional sentiment of these entrapped nationalities and thus add to the pressure for higher defence spending.

the low-income countries further suggests that such effect from EF is particularly strong when "desperate poverty, want, deprivation and degradation ... unduly heightens sensitivities and breeds a general atmosphere of unreasonableness and distrust, making it immensely more difficult to attain solutions ... on the basis of a reasonable give and take" (Vasil, 1984:1-2). In more affluent societies, on the other hand, it is probable that a more stabilized, well-established and well-functioning politico-economic structure tends to dampen the effect of EF by replacing the influence of primordial sentiments with a modern, professional process of decision-making.

An element that has been brought to attention above while considering the cases of Israel, Iraq, Iran, Angola and Yemen Arab Republic is the role of defence expenditure in the overall public spending. Since defence spending is likely to be influenced by political factors quite different from the determinants of other publicly provided goods, it is prudent to also look at a public spending variable that excludes defence expenditure, despite the note of caution above about the link between EF and defence spending. An analysis is thus conducted on the relationship between EF and a variable of public expenditure per capita excluding defence spending (PCE1) as well as such expenditure as a share of GDP (E1/G). The results are shown in Table 10. The samples for the three sets of developing countries are somewhat smaller than before due to the lack of defence expenditure data for some countries (these include Grenada, Nauru, Dominica, Vanuatu, Tonga, Cape Verde, Western Samoa, Tuvalu, Kiribati and the Comoros).

The results in general uphold the findings obtained without excluding defence despite that there is substantial decline in $r_{E1/G, EF}$ for the lower-middle-income countries though the correlation remains substantial in this case as in all others. The re-inclusion of the countries with exceptionally high defence spending-to-GDP ratios (Israel, Iraq, Iran, Angola, Yemen Arab Republic) gives $r_{PCE1, EF}$ and $r_{E1/G, EF}$ respectively at -0.42 and -0.34 for the upper-middle- and high-income developing countries, -0.23 and -0.21 for the lower-middle-income group, and -0.65 and -0.66 for the low-income category, and comparing these results with those in Table 9 suggests that the countries' emphasis on defence spending does not only have a simple numerical impact on total expenditure but has a wider, more comprehensive influence on the orientation of their budget policies.

5. Countervailing Influences from Preferential Policies and Decentralization

While the analysis presented above seems largely to lend support to the argument that the impact of ethnic diversity on government size from the economic perspective is negative, such generalized picture derived from international comparative data analysis, nevertheless, obscures the fact that the economic histories of individual countries may show a more complex picture of the link between ethnic fractionalization and the size of the public sector. Ethnic diversity, reflected in a high degree of pluralism, can lead to the expansion of the public sector through the State's assumption of the role of an agent promulgating ethnic reform policies, in particular to reduce real or perceived ethnic income inequalities. Central to this is the role of the State in an ethnically diverse society, its relationship with the numerically/politically dominant ethnic group and the form of ethnic reform policy involved. Such an assertion need not be viewed as contradicting the negative link observed above as it relates more to certain stages of a number of individual countries' socioeconomic development, unless the empirical results from a cross-national, cross-sectional analysis show a strong and consistent positive relationship between ethnic diversity and government size. Although countries which have implemented such explicit ethnic-reform policies at certain stages of their economic histories, which is the result of a combination of individual necessity, urgency and objective politico-economic situation, are not that numerous in the world context, their experiences should be considered an important complement to any cross-national statistical analysis attempted. Therefore, *at certain stages in a country's socioeconomic development, ethnic diversity can lead to an expansion of the public sector through ethnic reform policies implemented by the State especially in a country where the demographic majority is dominant in the political structure but not in the economy.*¹²

¹² Prominent examples of such countries include Malaysia where such policy impact has been an integral part of the politico-economic structure of the country since the 1970s, Fiji where such policy imperative has been in progress since the mid-1980s coup and the new South Africa where such policy direction is increasingly inevitable to allay the growing social discontent of newly empowered but economically backward ethnic majority. Among other countries where the politically dominant ethnic majority has in one way or another voted themselves preferences over the economically more successful minorities are Sri Lanka, Nigeria, various states of India, Indonesia, Uganda, Guyana, Trinidad and Sierra Leone (see *e.g.* Sowell, 1990).

Given the above proposition, there remains a possibility that ethnic diversity can still exert an influence on the size and development trend of the public sector in countries where the State does not respond to the exigencies engendered by the ethnic conflict by resorting to ethnic preferential policies. One of the important alternative response is ethnic accommodation through political decentralization and fiscal federalism which can have an impact on government size not only as an independent explanatory variable, but also as an exogenous factor influencing the link between ethnic diversity and the size of the public sector, or as a conduit through which such diversity indirectly exerts its influence on the latter. The factors that really determine the exact policy choice, however, would include the numerical structure of ethnic composition, the historical geography of ethnicity, as well as the territorial, political and economic dimensions.

The decentralization of government operations has often been seen to be a possible response to diverse preferences, as well as a solution to the difficulty in reaching collective decision in a diverse society (Tiebout, 1956; Wallis and Oates, 1988). Without decentralization, residents of countries with relatively diverse populations may respond to the potential inefficiency (due to diverse preferences) of uniform public provision by choosing relatively low levels of public spending on goods and services that can be provided privately. McCarty (*op.cit.*) argued that with decentralization whereby groups of people with similar preferences may sort themselves into communities with different local governments, the level of spending chosen by a community's median voter will suit her/his fellow residents' tastes more closely than is possible in a more diverse community. In this case, diversity is associated with fewer welfare losses, and therefore is less likely to discourage public provision of goods.¹³

¹³ In conventional formulation, central and regional/state government budgets can be shown to be the function of direct and indirect taxes, money supply and public debt. If the pre-decentralization public budget is expressed as

$$EE + TE + SE = DT + IT + M + D$$

where EE is the expenditure on public goods and services, TE transfer expenditure, SE stabilization expenditure, DT direct taxes, IT indirect taxes, M money supply, and D issue of public debt, following Monasterio Escudero (1988) the post-decentralization budget can be expressed as the consolidation of the following two equations (federal and regional/state public sector budgets):

However, the argument that decentralization has the effect of countervailing the impact of diverse preferences on the level of public spending rests upon the assumption that groups of people with similar preferences are able to sort themselves into relatively homogeneous communities with different local governments. In the case of ethnic diversity, this possibility is reflected in countries where separate ethnic groups are uniquely concentrated into separate regions (*e.g.* Switzerland, Belgium and Spain). Here, political decentralization and fiscal federalism can allow each group to determine its own preferred level of public output.

Nevertheless, such an arrangement would not be relevant to a country where ethnic communities are not regionally concentrated but widely dispersed and intermingled, such as the United States of America and Malaysia. There are various patterns of demographic intermingling. Groups can be intermingled on a regional scale - regions are heterogeneous but small communities are homogeneous, as in Malaysia in 1960s and 70s, or on a local scale where even small communities are heterogeneous, as in Sarajevo and many parts of Bosnia-Herzegovina before the recent war (van Evera, 1994). Furthermore, the power relationship

$$\begin{aligned} EE_c + TE + SE &= DT_c + IT_c + M + D_c \\ EE_r &= DT_r + IT_r + D_r \end{aligned}$$

with the subscript c designating revenues and expenditures left within the domain of the central government and the subscript r designating those passed into the ambit of the regional/state governments. Writing total central government expenditure as GE_c , these two equations can be rewritten as

$$\begin{aligned} GE_c (1+a) &= DT (1+b) + IT (1+c) + M (1+d) + D (1+e) \\ EE_r (1+g) &= DT (1+b) + IT (1+c) + D (1+f) \end{aligned}$$

where the letter a, b, c, d, e, f and g represent the growth rates of central government expenditure, direct taxes, indirect taxes, money supply, central government debt, regional/state government debt and regional/state government expenditure respectively. It should be noted that there are diverse views in the academic circle on how decentralization actually affects the size of the public sector. According to Brennan and Buchanan (1980), competition among governments in a federal system limits the capacity of the State to channel resources into the public sector, thus providing a powerful constraint on the "Leviathan". In contrast, Oates (1985:749), citing economic historian John Wallis, opined that decentralized fiscal decision making leads to expansion in public sector size due to the willingness of individuals to empower the public sector with a wider range of functions and responsibilities where such activities are performed locally. Such diverse viewpoints can also be seen in the works of Goetz (1977), Cameron (1978), Crain, Tollison, Goff and Carlson (1985), Hewitt (1986) and Mueller (1987).

between the dominant and the subordinate groups is influenced by the extent to which the latter is located in a particular regional (or urban) setting - whether it is a "concentrated" or "dispersed" community - besides the objectives of the dominant community, as summarized in Table 11 (van Amersfoort, 1978).¹⁴

A subordinate group that forms a numerical majority in certain regions of a state (or lives in large numbers in inner city areas) may have greater politico-economic leverage than a more "dispersed" community.¹⁴ In terms of political influence in a democracy, Lee (1983) noted that the vote of a concentrated minority may be more effective than that of a dispersed community under a "winner takes all" electoral system. In short, closely linked to the issue of fiscal decentralization is the degree of ethnic regional concentration (or conversely, the scope and pattern of ethnic dispersion). More precisely, the real extent of a country's ethnic division along regional lines both physically and psychologically, is measured by the degree of *sectionalism*, defined by Banks and Textor (1963:88) as "the phenomenon in which a significant percentage of the population of a nation lives in a sizable geographic area and identifies self-consciously and

¹⁴ Van Amersfoort summarized the objectives of the dominant communities into three major categories: emancipation, continuation and elimination. Emancipation policies aim to ensure full citizenship rights for the subordinate without insisting on their cultural or structural assimilation (*e.g.* in post-Franco Spain). Such policies do not require subordinate communities to disappear as a distinct entity. Continuation policies seek to preserve the existing relationship between the dominant and the subordinate. The reason may be that the subordinate group performs certain functions for the dominant or is being exploited by the latter. It can also be that certain minorities - *e.g.* the Roma (Gypsy) community - themselves may prefer to be left alone to pursue a symbiotic, though unequal, relationship with the dominant society. Finally, elimination policies can be in the form of measures aimed at the forced assimilation of the subordinate group by suppressing its constituent elements such as language, religion or culture (*e.g.* the suppression of the Chinese language under the former Suharto regime in Indonesia, Iran's persecution of the Baha'is and Turkey's repressive policy against Kurdish language and culture) or attempts to physically exterminate the subordinate group (*e.g.* the expulsion of Asians from Uganda by the former Idi Amin regime, population transfer during the partition of India, the genocide against the Chinese in the history of Indonesia and the Philippines, and the "ethnic cleansing" occurred in the successor states of former Yugoslavia). On the other hand, a subordinate group can be "universalistic" in orientation, aiming at participating in society and demand equality, or "particularistic" which tends to lead to secessionism and militancy. Table 11 demonstrates that a stable relationship between the dominants and subordinates free of conflict is an exception rather than a rule, since only two out of a total of twelve cells formed by the interface of dominant-subordinate orientations - those marked "emancipation process" and "federalism" - suggest the prospect of a stable form of participation in society by the subordinate groups.

distinctively with that area to a degree that the cohesion of the polity as a whole is appreciably challenged or impaired". Therefore, *ethnic diversity can have an influence on the size and development of the public sector of a country where the State response to exigencies engendered by such diversity involves not ethnic preferential policies but political decentralization and fiscal federalism.*

6. Concluding Remarks

This paper represents an attempt to explore the possible link between ethnic fragmentation and government size using data from over a hundred countries at various stages of economic development. Preliminary analysis suggests that ethnic fractionalization is inversely related to the size of public spending and the relationship is particularly strong for the developing country category. Moving upwards to categories of countries higher in economic affluence seems to weaken the link when such primordial attachments like race, tongue and religion on public decision-making gradually gives way to more modern, professional procedures. What is found here in fact contrasts with the relative lack of empirical evidence from previous attempts, e.g. Mueller and Murrell (1986) and, in particular, McCarty (*op.cit.*) who failed to establish a link between ethnic diversity and overall public spending (other than or inclusive of central government transfers). Besides differences in sample selection¹⁵, the adoption of a holistic approach here to use a measure which regards race, language and religion as merely different markers of a single variable of ethnic diversity, may have partly accounted for the different outcome. Such an approach is in contradistinction to the previous studies which either included only one of these components to the exclusion of the others or considered them as separate and distinct variables, thus leading to inaccurate measurement of the degree of fragmentation.¹⁶

¹⁵ With her sample limited to only 46 countries "with democratically elected governments", McCarty admitted that her study might have erred on the side of being inclusive in cases where the democratic process may not be fully formed since ambiguities abound in judging whether or not a particular country has a democratic election process (p.237). Such restriction is also based on a questionable assumption that racial/linguistic/religious fragmentation has no role to play in the public decision making process of an authoritarian ruling hierarchy.

¹⁶ See Yeoh (2001) for a detailed exposition of the nature and computation procedure of

Finally, the paper acknowledges the additional complexity posed by the existence in the real world of countervailing influences from preferential policies and decentralization, which themselves represent possible State responses to exigencies engendered by ethnic fragmentation, that have to be taken into account in any further analysis of the subject matter.

the ethnic fractionalization index (EFI).

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Table 1: Theories of Public Sector Growth

Theory	Nature	Authors	Key Variables	Essential Content
–				
"Wagner's Law" I: Social Restructuring.	Demand	Wagner (1877/90). Bird (1971).	Industrial employment. Female labour participation. Demographic growth. Population structure. Population density. Urbanization.	The transformation of a traditional society into a complex industrialized one through the substitution of private (family or group) activity by public activity: supply of public goods (defense, justice, internal order), economic regulation, correction of externalities, and administration of natural monopolies.
"Wagner's Law" II: Elastic demands for social goods.	Demand	Wagner (1877/90). Bird (1971).	Per capita income. Per capita disposable income.	Increase in real income stimulates the expansion of public expenditure on social goods. High income elasticity of demand: education, health, redistribution, etc.
Displacement effect.	Demand	Peacock & Wiseman (1961).	Wars. Crises.	Expenditure increases by jumps due to social upheavals, after which the level of expenditure does not return to its initial magnitude.
Income redistribution	Demand	Downs (1957), Romer & Rosenthal (1979) Meltzer & Richard (1981)	Average/median income disparity Extension of voting rights	Public expenditure for redistribution tends to increase in a democratic society due to the competition between parties for votes in the context of uneven distribution of income. Extension of voting rights to citizens with below average income.
Interest groups	Demand	Buchanan & Tullock (1962) Cameron (1978), Becker (1983)	Trade union power Number and weight of other organizations	Organized pressure groups have the incentives to push for quasi-private expenditure on public goods of which is distributed among the total population.
Fiscal illusion	Demand	Puviani (1903) Goetz (1977) Buchanan & Wagner (1977) Oates (1985b)	Public deficit Indirect/direct tax ratio Number of taxes Inflation rate	The costs of information, the system of tax collection, temporal distribution of taxes, and the complexity of the tax system reduce the perceived "price" of public expenditure.
Effect of relative prices and inelastic demands	Demand-supply	Baumol (1967), Beck (1981), Pommerehne & Schneider (1982)	Relative price of public goods and services	Low growth of productivity in the public sector and wage increase similar to the private sector stimulate the secular increase of the relative cost in the provision of public goods. If the demand for these is relatively inelastic before the "price" change, public expenditure increases in nominal terms (though not necessarily in real terms and in real terms).

Table 1 (cont'd)

Theory	Nature	Authors	Key Variables	Essential Content
Politico-economic-electoral cycle	Supply	Frey & Schneider (1981)	Unemployment rate Growth of disposable income Electoral frequency Government coalitions	The proximity of elections can bring about counter-cyclical expenditure p are no strong compensatory influences, e.g. from central banks, or in the p parliaments.
Bureaucracy I: Budget maximization	Supply	Niskanen (1971), Romer & Rosenthal (1979)	Number of public sector employees	Bureaucrats tend to prefer big budgets (associated with power, prestige an monopolistic power to impose their budgets on a less well informed legisl
Bureaucracy II: Public sector employees as voters	Supply	Bush & Denzau (1977) Frey & Pommerehne (1982)	Number of public sector employees Attitudes of bureaucrats	As voters, bureaucrats can be expected to favour the maintenance of and i of the sector that sustains them.
Ideology of the governing party	Supply	Cameron (1978), Castles (1982)	Orientation of the party in power	Socialist or pro-statist governments tend to increase public spending more liberal or conservative in orientation.
Centralization of political power	Supply	Tarschys (1975) Brennan & Buchanan (1978), Oates (1985a)	Political orgainzation of the state Share of tax revenues collected by central government in total tax revenue	Fiscal decentralization can either increase spending (in the presence of du the expenditure coming from higher levels of government) or reduce it (in direct control on local expenditures by the voters)

Source: Gonzalez-Paramo and Raymond Bara (1988).

Table 2 GDP per capita (US\$)

	Mean	Max	Min	CV
All countries (<i>N</i> =119)	4747.53	22470.00	120.00	1.37
Advanced industrialized countries (<i>N</i> =23)	16612.39	22470.00	7730.00	0.23
Upper-middle- and high-income developing countries (<i>N</i> =20)	6094.00	13900.00	2590.00	0.57
Lower-middle-income countries (<i>N</i> =38)	1244.47	2300.00	630.00	0.40
Low-income countries (<i>N</i> =38)	360.54	615.00	120.00	0.37

Table 3 GDP per capita of four categories of countries (US\$)

<i>Advanced industrialized countries</i>	<i>Upper-middle- & high-income developing countries</i>	
USA	22470	Singapore 13900
Switzerland	21700	Israel 12000
Austria	20985	Nauru 10000
Luxembourg	20200	Bahamas 9900
Canada	19400	Cyprus (Greek sector) 9600
Federal Republic of Germany	19200	Taiwan, Republic of China 7380
Japan	19000	Malta 7000
France	18300	Barbados 6500
Denmark	17700	Antigua and Barbuda 6500
Belgium	17300	Republic of Korea 6300
Sweden	17200	Seychelles 5200
Norway	17100	Saint Kitts and Nevis 3650
Italy	16700	Trinidad and Tobago 3600
Netherlands	16600	Turkey 3400
Iceland	16200	Mexico 3200
Finland	16200	Gabon 3090
Australia	16200	Grenada 2800
UK	15900	Malaysia 2670
New Zealand	14000	South Africa 2600
Spain	12400	Venezuela 2590
Ireland	11200	
Portugal	8400	Mean 6094
Greece	7730	
Mean	16612	

Table 3 GDP per capita of four categories of countries (US\$) (Cont.)

<i>Lower-middle-income countries</i>		<i>Low-income countries</i>	
Syria	2300	Senegal	615
Chile	2300	Zambia	600
Algeria	2130	Comoros	540
Panama	2040	Mauritania	535
Dominica	2000	Tuvalu	530
Iraq	1940	Myanmar/Burma	530
Costa Rica	1900	Yemen Arab Republic	526
Fiji	1700	Kiribati	525
Belize	1635	Sudan	450
Thailand	1630	Central African Republic	440
Iran	1500	Nicaragua	425
Lebanon	1400	Sri Lanka	410
Jamaica	1400	Guinea	410
Tunisia	1320	Benin	410
Saint Vincent and the Grenadines	1300	Togo	400
Colombia	1300	Liberia	400
Guatemala	1260	Ghana	400
Jordan	1100	Equatorial Guinea	400
Ecuador	1070	Kenya	385
Congo	1070	Pakistan	380
Morocco	1060	India	380
Honduras	1050	Sierra Leone	330
Cameroon	1040	Burkina Faso	320
Djibouti	1000	Uganda	300
Angola	950	Niger	300
Peru	920	Mali	265
Vanuatu	900	Zaire	260
Tonga	900	Tanzania	260
Papua New Guinea	800	Nigeria	250
Cote d'Ivoire/Ivory Coast	800	Lesotho	240
Cape Verde	800	Gambia	235
Swaziland	725	Chad	205
Philippines	720	Malawi	200
Egypt	720	Madagascar	200
Western Samoa	690	Bhutan	200
Zimbabwe	660	Nepal	165
Indonesia	630	Guinea-Bissau	160
Bolivia	630	Mozambique	120
Mean	1244	Mean	361

Table 4 Public Expenditure per capita (US\$)

	Mean	Max	Min	CV
All countries (<i>N</i> =119)	1806.88	12270.00	23.00	1.55
Advanced industrialized countries (<i>N</i> =23)	6379.34	12270.00	2962.80	0.42
Upper-middle- and high-income developing countries (<i>N</i> =20)	2342.20	10025.00	519.00	0.95
Lower-middle-income countries (<i>N</i> =38)	457.44	1897.45	79.06	0.75
Low-income countries (<i>N</i> =38)	107.02	452.92	23.00	0.84

Table 5 Public expenditure per capita of four categories of countries (US\$)

<i>Advanced industrialized countries</i>	<i>Upper-middle- & high-income developing countries</i>	
Norway	12270	Israel 10025
Federal Republic of Germany	11543	Nauru 5444
Italy	9757	Malta 3619
Denmark	9683	Cyprus (Greek sector) 3459
Sweden	9149	Singapore 3223
Finland	8293	Seychelles 2906
UK	8115	Bahamas 2844
Iceland	7336	Barbados 2412
Netherlands	7332	Saint Kitts and Nevis 1697
Austria	6737	Antigua and Barbuda 1575
Luxembourg	5861	Taiwan, Republic of China 1442
Belgium	5521	Gabon 1356
New Zealand	5467	Trinidad and Tobago 1308
USA	5198	Republic of Korea 997
Canada	5056	Grenada 929
France	4301	South Africa 840
Australia	4290	Turkey 833
Japan	4266	Malaysia 782
Ireland	3578	Venezuela 634
Switzerland	3486	Mexico 519
Greece	3279	
Portugal	3244	Mean 2342
Spain	2963	
Mean	6379	

**Table 5 Public expenditure per capita of four categories of countries (US\$)
(Cont.)**

<i>Lower-middle-income countries</i>		<i>Low-income countries</i>	
Iraq	1897	Tuvalu	453
Iran	1308	Yemen Arab Republic	321
Dominica	977	Myanmar/Burma	218
Panama	672	Kiribati	218
Algeria	649	Lesotho	216
Tunisia	639	Sri Lanka	210
Fiji	619	Comoros	186
Chile	613	Liberia	177
Vanuatu	590	Mauritania	168
Saint Vincent and the Grenadines	581	Nicaragua	129
Syria	546	Senegal	125
Belize	537	Kenya	107
Jordan	534	Gambia	93
Angola	494	Togo	92
Western Samoa	489	Guinea	91
Tonga	474	Zambia	88
Swaziland	395	Pakistan	82
Djibouti	394	Nigeria	79
Lebanon	378	Benin	78
Honduras	373	Equatorial Guinea	75
Papua New Guinea	364	Sudan	74
Cape Verde	347	Bhutan	73
Costa Rica	339	Chad	66
Congo	323	Central African Republic	64
Thailand	311	India	60
Cote d'Ivoire/Ivory Coast	304	Mali	60
Zimbabwe	299	Mozambique	56
Jamaica	294	Niger	55
Morocco	288	Malawi	53
Egypt	282	Ghana	48
Ecuador	201	Sierra Leone	42
Colombia	145	Madagascar	42
Cameroon	142	Nepal	31
Philippines	139	Burkina Faso	30
Guatemala	133	Guinea-Bissau	29
Indonesia	120	Zaire	28
Bolivia	113	Uganda	28
Peru	79	Tanzania	23
Mean	457	Mean	107

Table 6 Ethnic Fractionalization (EF Index)

	Mean	Max	Min	CV
All countries (<i>N</i> =119)	0.469	0.885	0.002	0.59
Advanced industrialized countries (<i>N</i> =23)	0.224	0.714	0.012	0.89
Upper-middle- and high-income developing countries (<i>N</i> =20)	0.372	0.873	0.002	0.67
Lower-middle-income countries (<i>N</i> =38)	0.496	0.852	0.039	0.48
Low-income countries (<i>N</i> =38)	0.640	0.885	0.020	0.37

Table 7 Ethnic fractionalization of four categories of countries (EF index)

<i>Advanced industrialized countries</i>	<i>Upper-middle- & high-income developing countries</i>	
Canada	0.714	South Africa 0.873
Belgium	0.574	Gabon 0.765
Switzerland	0.531	Malaysia 0.694
Luxembourg	0.452	Trinidad and Tobago 0.635
Spain	0.436	Nauru 0.583
USA	0.395	Mexico 0.542
UK	0.325	Venezuela 0.497
France	0.235	Singapore 0.479
New Zealand	0.217	Barbados 0.333
Italy	0.196	Turkey 0.330
Sweden	0.164	Grenada 0.308
Federal Republic of Germany	0.134	Israel 0.303
Finland	0.122	Taiwan, Republic of China 0.274
Ireland	0.113	Bahamas 0.255
Australia	0.096	Antigua and Barbuda 0.150
Japan	0.079	Saint Kitts and Nevis 0.115
Iceland	0.077	Seychelles 0.115
Netherlands	0.077	Cyprus (Greek sector) 0.097
Greece	0.068	Malta 0.096
Denmark	0.059	Republic of Korea 0.002
Norway	0.058	
Portugal	0.019	Mean 0.372
Austria	0.012	
Mean	0.224	

**Table 7 Ethnic fractionalization of four categories of countries (EFI)
(Cont.)**

<i>Lower-middle-income countries</i>		<i>Low-income countries</i>
Cameroon	0.852	Zaire 0.885
Philippines	0.838	Uganda 0.883
Cote d'Ivoire/Ivory Coast	0.826	Kenya 0.877
Lebanon	0.821	India 0.876
Papua New Guinea	0.806	Mali 0.844
Angola	0.771	Nigeria 0.827
Indonesia	0.754	Tanzania 0.827
Bolivia	0.735	Zambia 0.813
Belize	0.711	Chad 0.810
Congo	0.685	Guinea-Bissau 0.806
Iran	0.661	Senegal 0.788
Guatemala	0.645	Madagascar 0.776
Peru	0.637	Sierra Leone 0.771
Ecuador	0.615	Gambia 0.764
Colombia	0.601	Central African Republic 0.757
Djibouti	0.585	Liberia 0.745
Fiji	0.580	Guinea 0.742
Cape Verde	0.551	Ghana 0.741
Zimbabwe	0.522	Burkina Faso 0.734
Iraq	0.502	Mozambique 0.727
Tonga	0.500	Sudan 0.715
Chile	0.498	Malawi 0.691
Jordan	0.481	Togo 0.689
Panama	0.477	Niger 0.671
Syria	0.417	Benin 0.660
Thailand	0.406	Pakistan 0.648
Jamaica	0.395	Nepal 0.634
Saint Vincent and the Grenadines	0.306	Bhutan 0.555
Morocco	0.293	Myanmar/Burma 0.520
Egypt	0.270	Yemen Arab Republic 0.495
Costa Rica	0.237	Nicaragua 0.484
Swaziland	0.186	Sri Lanka 0.429
Honduras	0.185	Equatorial Guinea 0.395
Algeria	0.163	Mauritania 0.348
Western Samoa	0.138	Comoros 0.241
Vanuatu	0.114	Tuvalu 0.077
Dominica	0.059	Kiribati 0.039
Tunisia	0.039	Lesotho 0.020
Mean	0.496	Mean 0.640

Table 8 Partial correlation between public expenditure per capita (PCE) or public expenditure as a percentage of GDP (E/G) and ethnic fractionalization (EF)

	$r_{\text{PCE, EF}}$	$r_{\text{E/G, EF}}$
All countries ($N=119$)	-0.51	-0.45
Advanced industrialized countries ($N=23$)	-0.29	-0.49
Upper-middle- and high-income developing countries ($N=20$)	-0.19	-0.07
Lower-middle-income countries ($N=38$)	-0.26	-0.32
Low-income countries ($N=38$)	-0.74	-0.72

Table 9 Partial correlation between public expenditure per capita (PCE) or public expenditure as a percentage of GDP (E/G) and ethnic fractionalization (EF) (re-estimation for the four country sets)

	$r_{\text{PCE, EF}}$	$r_{\text{E/G, EF}}$
Advanced industrialized countries ($N=20$)	-0.50	-0.57
Upper-middle- and high-income developing countries ($N=15$)	-0.68	-0.33
Lower-middle-income countries ($N=35$)	-0.58	-0.51
Low-income countries ($N=37$)	-0.77	-0.72

Table 10 Partial correlation between public expenditure per capita excluding defence spending (PCE1) or public expenditure minus defence as a percentage of GDP (E1/G) and ethnic fractionalization (EF)

	$r_{PCE1, EF}$	$r_{E1/G, EF}$
Advanced industrialized countries ($N=20$)	-0.52	-0.58
Upper-middle- and high-income developing countries ($N=14$)	-0.68	-0.37
Lower-middle-income countries ($N=30$)	-0.49	-0.38
Low-income countries ($N=37$)	-0.65	-0.65

Table 11 Typology of Dominant-Subordinate Relations

orientation of dominant group	dispersed subordinate group orientation		concentrated subordinate group orientation	
	<i>universalistic</i>	<i>particularistic</i>	<i>universalistic</i>	<i>particularistic</i>
emancipation	emancipation process	sectarian minority	federalism	secessionist movement; eventually secession
continuation	suppression (struggle for emancipation)	reservation situation	suppression (struggle for regional autonomy)	secessionist war
elimination	forced assimilation or extermination	forced assimilation or extermination	forced assimilation or extermination	secessionist war, forced assimilation or extermination