HUMAN CAPITAL FORMATION IN ST. KITTS AND NEVIS*

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INTRODUCTION

We begin this paper with a review of the concept of human resources, in the context of economic development. Next we give a brief background to some issues in St. Kitts and Nevis from a macroeconomic and a microeconomic point of view. Following that we reestablish the links between revenue and GDP per capita, and expenditure and GDP per capita. Next we turn to human capital formation and focus on student enrollment, teachers, etc as they are expressed in the expenditure ratios. The assumption underpinning the flow of our paper is that there is a direct link between human capital formation, GDP and time. We test some models of GDP per capita on education expenditure to attempt to get some more insights into the links. Finally, we consider an array of skills in the economy and try to derive the types of skills that may be needed in the economy over the next several years.

Adam Smith, the *Father of Economics*, was the first economist to locate the importance of human capital formation in the context of economic development. Between the 1960's and the 1980's, a series of studies from economists based in the United States of America (USA), some based in Europe, and some based at UNESCO, sought to articulate positions to put education as a central tenet in the development process. The economists' view or philosophy was premised on the economic scenario that focused on the factors of production in economics. From elementary economics, we know that the four factors of production are land, labor, capital and entrepreneurship. We also know that the associated payments to the factors of production are rent, wages, interest and profit. Labor is the human component. Capital is the physical component. For many years it was felt that countries had to invest in human beings, and invest in the nations overall to stimulate the necessary economic growth and to augment economic development. Human resources or inputs were seen as pivotal in this process. When this idea was first developed, in the early 1960s, many people thought that this was too crass an idea. How, they argued, could human beings be equated to physical capital? After much debate, the human capital

theorists won the debate because they were more forceful in putting forward a view that human capital was of critical importance to the development process. The principal topic was that it was not the people that were being analyzed. It was the investment in the people that was of moment. Hence, it was how much was invested in teachers, in nurses, in doctors, in custom officers, etc. It was the financial capital or resources devoted to enhancing the skills and competence and the capacity of the people that were of salience to the overall development process of the country or state. Once this view was established human capital formation was then factored in the development process from a stream of funds point of view. It was the worth of the expenditures as the accretive ability of the human resources to expand the economy that got theorists and policy-makers thinking that human capital has to be given a prominent role in the development process. As many early articles and books put it, it was a system where ***economic growth and development were seen as functions of the expenditures on education.*** (See, for example, Benham, 1959; Mc. Clelland, 1966; Jones-Hendrickson, 1970).

The central tenet in this idea about human capital is that through education and training, the quality of people can be improved. This is the human capital formation feature. While there must be improvements and additions to the building stock, the machinery, and the stock of materials needed for production, ***there must also be human capital and improvements in human capital if the economic system is to function adequately.*** A direct outgrowth or derivative of the physical capital and the human capital is the fact that investment will occur. ***Investment is the phenomenon whereby present goods and services are converted in future goods and services***. In a nutshell, when we talk about human capital formation, we are talking about a dynamic process in which the productive physical and mental talents of a people are engaged in the economic development process. We are talking about the human component of the capital stock that is transformed into further production. Anything that aids in further production is investment.

BRIEF BACKGROUND TO ST. KITTS AND NEVIS

Let us first give some background to the State of St. Kitts and Nevis over the period 1989 to 2000. In Table 1.0 we present some macroeconomic data on the State of St. Kitts and Nevis over the period 1989 to 2000. We first present the estimated mid-year Population, the Gross Domestic Product at Factor Cost, the Total Revenue and the Total Recurrent and Non-Recurrent Expenditure. The data in Table 1.0 provide some general insights of the macro picture of the State. It is to be noted that population has been fairly constant over time. In fact, for all practical purposes, there has been no significant growth in the population. Over the 12-year period, there was a net addition of 500 persons to the population or about 46 persons per annum. The crude birth rate is about 20 per annum and the crude death rate is about 10 per annum. High out-migration accounts for the low net population growth. The trend in the population is to be contrasted with the trends in GDP, the Revenue and the Expenditure. In all three instances, the upward trends have shown instances of at least a doubling of the macroeconomic figure over the 12-year period. When allowances are made for inflation, there is still an upward trend in the three aggregates. The impact of hurricanes, mudslides and other natural disasters are, to a large extent, responsible for much of the expansionary expenditure in the last several years. In addition, given the expressed philosophy of the Labour Government, that it will be the motor of development, much of the initial pulse of growth over the last five years, has come from the government sector. This idea is more pronounced in St. Kitts than in Nevis. (See Jones-Hendrickson, 2000).

Table 1.0: SELECTED MACROECONOMIC DATA OF ST. KITTS AND NEVIS, 1989-2000.

	Population	GDPfc (EC$m)	Revenue (EC$m)	Expenditure (EC$m)
1989	41,960	321.29	93.01	85.42
1990	41,870	360.31	106.15	105.75
1991	41,000	379.32	94.67	104.09
1992	42,670	418.26	111.58	111.22
1993	43,520	450.97	123.57	120.64
1994	43,050	505.61	145.29	146.49
1995	43,530	524.82	147.85	157.44
1996	42,280	555.82	154.37	172.81
1997	40,740	625.07	171.74	179.08
1998	40,130	652.04	187.83	199.68
1999	42,460	693.34	191.41	236.85
2000	44,503	763.02	237.81*	243.74*

Source: ***St. Kitts and Nevis Digest of Statistics, 1999***, p. 16; p. 85; p. 88; p.90

*These data were obtained from the St. Christopher and Nevis ***Draft Estimates For the Year 1999,*** p. i.

* See also Eastern Caribbean Central Bank ***National Accounts Statistics, 2001***, section 7

At the micro-level we observe that in Table 2.0 the per capita figures show another side of the data. There we note that the GDP per capita rose from EC$7,649.76 in 1989 to EC$17,145 in 2000, or a 6.5% growth rate per annum. Correspondingly, per capita revenue over the period rose from EC$2,214.76 to EC$5,343.68 over the period 1989 to 2,000, or an 8% growth rate per annum. This is to be contrasted with the per capita expenditure which rose from EC$2,033.81 to EC$5,476.93 over the same period, or about 9% per annum The expenditure/revenue gap was decidedly in favor of expenditure, even though both indices trended upwards. In five of the years under observation, revenue was greater than expenditure. The five years of note were 1989, 1990, 1992, 1993 and 1998. For an illustrative point, we highlight the data of Table 2.0 in graph one.

The very close correlation between the two variables is evident. The stability of population had little to do with the closeness of the series.

TABLE 2.0 PER CAPITA GDP, REVENUE AND EXPENDITURE

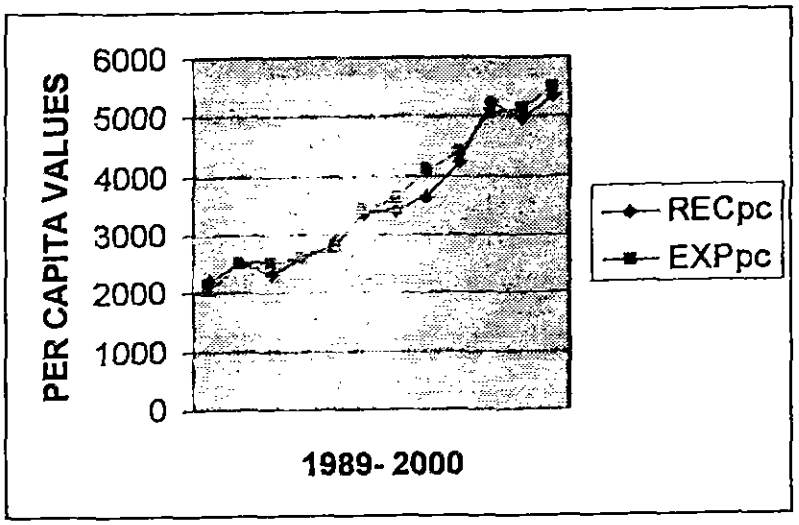
	GDPpc	REVENUEpc	EXPENDITUREpc
1989	7649.76	2214.76	2033.81
1990	8599.28	2533.41	2523.87
1991	9251.71	2309.02	2538.78
1992	9795.32	2613.11	2604.68
1993	10367.13	2840.69	2773.33
1994	11731.09	3371.00	3398.84
1995	12064.83	3398.85	3619.08
1996	13139.95	3649.41	4085.34
1997	15357.25	4219.66	4400.00
1998	16260.35	5237.16	5042.39
1999	16313.88	4984.94	5134.83
2000	17,145.00	5343.68	5476.93

Source: **Data derived from Table 1.0 above.**

Given the nature of the economic fundamentals underpinning the development process in St. Kitts and Nevis, we derived some elementary estimates of the per capita revenue (REVpc) as a function of GDPpc. The results show the model equation, the value of the statistics, a graph of the model, a summary of the estimates of the multiplier and the elasticity. We are able to explain 96.6 per cent of the variation in revenue per capita with a very significant t-statistic of 16.85, at the .01-level.

We derived **a multiplier of 1.50**. This indicates that for every one dollar of GDP per capita, Revenue per capita expanded by one dollar and fifty cents. The multiplier is used here to illustrate that changes in GDP per capita can bring about magnified changes in revenue per capita. *We also derived **an elasticity of 1.16**; this means that for every*

GRAPH 1.0: PERCAPITA REVENUE AND EXPENDITURE

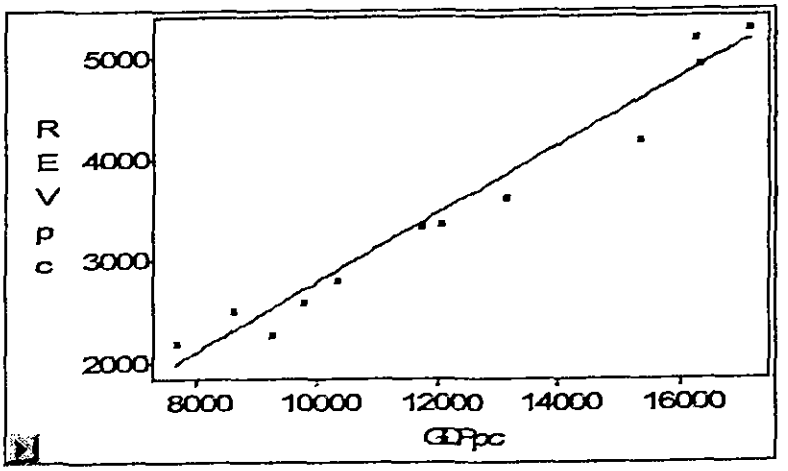


Source: ***Original data from Table 2.0***

one- percent change in per capita GDP, Revenue per capita responded by 1.16 percent. The multiplier and the elasticity are used as "indicative measures" of change in the aggregates.

Model Equation					
REVpc	=	- 620.571	+	0.3397	GDPpc

t-Stat =	-2.42	16.85

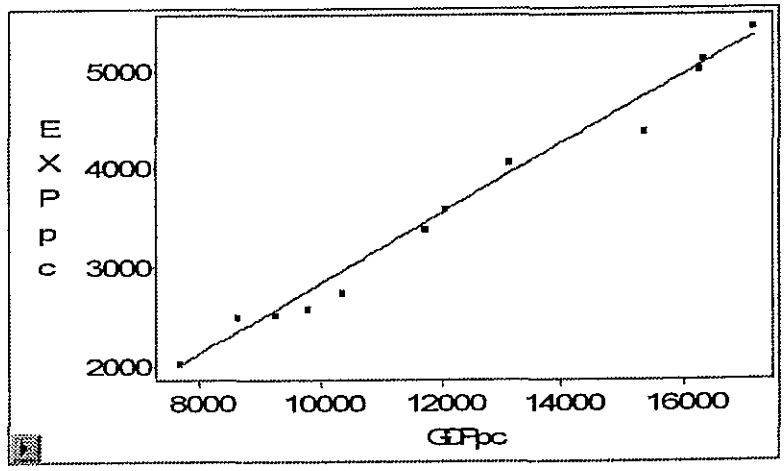


Summary of Fit			
Mean of Response	3559.6408	R-Square	0.9660
Root MSE	221.1502	Adj R-Sq	0.9626

In the case of the Expenditure per capita, we followed the same format as the Revenue per capita. Here we present an estimate of the model equation, the t-statistic, a graph, a summary of the fit of the data, the multiplier and the elasticity. We are able to explain 98 percent of the variation in the data. The t-statistic of 24.71 is very significant at the .01 level. We derived a **multiplier of 1.53,** which indicates that for every one dollar of GDP per capita, Expenditure per capita expanded by 1.53. We also derived **an elasticity of 1.18.** Here, for one- percent change in GDP per capita, expenditure changed by 1.18 percent. This, like the example of the revenue, is also an elastic response because the elasticity is greater than one. Here, too, the multiplier and the elasticity are used as "indicative measures" of the directions of change in the aggregates. It is to be noted that they are not part of the regression; they were merely derived from the regression results and given here for purposes of illustrating the responsiveness of the variables.

Model Equation					
EXPpc	=	-	712.744	+	0.3534 GDPpc

t-Stat	**=**	**-3.92**	**24.71**



Summary of Fit			
Mean of Response	3635.9900	R-Square	0.9839
Root MSE	156.8723	Adj R-Sq	0.9823

HUMAN CAPITAL: STUDENT ENROLLMENT AND TEACHER RATIOS.

Over the period 1988/89 to 1999/2000, the student enrollment in all the schools in St. Kitts and Nevis has been at a virtual standstill. In 1988/89 there were 10, 377 students enrolled in the State. From the ***Draft Estimates***, by 2000/2001, the number of students enrolled had fallen to 9,598. This virtual trend, indeed this fall, is very symptomatic of the trend in the population. Even though there have been some increases of persons from some Caribbean countries, there is no clear appreciable increase in the student age population over the period 1988/89 to 1999/2000. If this situation continues, the State could face a serious problem in its critically needed manpower. (More about this later when we consider the role of the Diaspora.). In Table 3.0 we present data on the student enrollment, the number of teachers and the expenditure on education over the period, 1989 to 2000.

TABLE 3.0 STUDENTS, TEACHERS AND EXPENDITURE IN ST. KITTS AND NEVIS, 1989-2000

	STUDENTS (STU)	TEACHERS (TEA)	EDUEXP (EC$m)
1989	10,377	648	14.00
1990	10,217	656	14.15
1991	10,346	662	14.72
1992	10,309	674	15.68
1993	10,233	662	16.30
1994	10,193	670	21.04
1995	10,343	689	22.46
1996	10,681	626	33.63
1997	10,721	817	46.40
1998	10,505	819	44.60
1999	9,224	838	51.04
2000	9598*	872	61.63

Source: ***St. Kitts and Nevis Digest of Statistics, 1999***, p. 20;
St. Christopher and Nevis Estimates For The Years, 1989-2000.
* Estimated. Nursing students are included in these totals.

The data on the students and the teachers give a first approximation of the nature of human capital formation in the State. Students form the core of what will be the foundation of the skills' categories, which we will consider later. Teachers form the basis of the human power that is the transformative agent in the development process. From this perspective we can use the educational expenditure as it relates to students and to teachers as corresponding links to per capita GDP.

In Table 4.0 we present the ratios of Students to Teachers (**STU/tea**), Expenditures to Students (**EXP/tea**), Expenditures to Teachers (**EXP/tea**) and GDP per capita (**GDPpc**). We give these for three distinct set reasons. First, we get an idea of the scope of the teachers' coverage and the possible learning thrust. Second, we get an idea of the "exhaustive" nature of the educational expenditure as it relates to students and teachers. Third, we used the data to "test" some relationships among the aggregates.

By "scope of the teachers' coverage" we mean the number of students that teachers have to teach or to cover. The assumption here supports the indisputable evidence that ***the smaller the students to teacher ratio, the better the students perform***. Now, we are not saying to go to the extreme of one student per teacher. But when the student to teacher ratio is about one teacher to 20 students, the scope and quality of the teacher seems to improve. This student to teacher ratio is a very good expression of the context of human resource planing. "The purpose of human resource planning is to make sure that the organization has the right number of people of the right profile at the right time." (Kubr, Editor, 1996). In the context of the students to teacher ratio, the idea is to have the right number of students to teacher, at the right time.

The "exhaustive nature" nature of the educational expenditure refers to the amount of expenditures that are devoted to students and to teachers. In many respects, education budgets are large, but the bulk of the budget is "trapped" in the ambit of administrative line, as opposed to being used for the students or the teachers.

The tests that we will perform are crucial in that they could give some insights into the links between education and economic development. Expenditures are easily measured when a good is produced. However, when a service is rendered, the measurement of that service is oft times difficult to measure. We have to use a derived measure. That is, we have to use an impact on something derived from something else. In the case of students and teachers we could use as one measure, the number of students who pass a given examination for which a given teacher prepared them. There are other variables, but this is one measure. Money associated with the teaching could then be used as a basis for assessing the service of the teacher.

Table 4.0: EDUCATIONAL EXPENDITURES TO TEACHERS, STUDENTS AND GDP PER CAPITA, ST. KITTS AND NEVIS, 1989-2000

	STU/tea*	EXP/stu** (EC$)	EXP/tea*** (EC$)	GDPpc**** (EC$)
1989	16.01	1349.14	21604.94	7649.76
1990	15.57	1384.95	21570.12	8599.28
1991	15.63	1422.77	22235.65	9251.71
1992	15.30	1521.00	23264.10	9795.32
1993	15.44	1592.89	24622.36	10367.13
1994	15.21	2064.16	31402.99	11731.09
1995	15.01	2171.52	32597.97	12064.83
1996	17.06	3148.58	53722.05	13139.95
1997	13.12	4327.95	56793.15	15357.25
1998	12.83	4245.60	54456.65	16260.35
1999	11.01	5533.39	60906.92	16313.88
2000	11.01	6421.13	70676.61	17145.00

Source: **Data derived from Table 3.0**

***STU/tea** = **Students to Teachers' ratio**

****EXP/stu** = **Expenditure to Students' ratio**

*****EXP/tea** = **Expenditure to Teachers' ratio**

******GDPpc** = **Gross Domestic Product per capita**

Let us use GDP per capita as a broad, albeit, inadequate measure of economic development. Let us explore the relationships between GDP per capita (GDPpc) and the Expenditure to student ratio (EXP/stu), and also GDP per capita and the Expenditure to Teachers' ratio, namely EXP/tea. These two ratios could be construed as surrogates of human capital formation. These are only two measures. We could also have used ratios such as physicians to population, nurses to population, among others, as they are expressed in terms of the expenditures associated with their education and training.

We note that in 1989 the State spent, on average, EC$1,3489 on each student in the school system. By 2,000 that amount had expanded to EC$6,421 or about a five-fold increase. This is broadly defined to mean that resources were available to the tune of EC$1,389 to those students who were in primary and secondary schools and the College of Further Education. Nursing students are included in the total. In the case of teachers, the corresponding nunbers were EC$21,605 in 1989 with a rise to EC$70,677 in 2000. This was a little over a three-fold increase. The same principle is applicable here. These amounts were resources available to the teachers. From the data, as observed in the ***Government Estimates***, resources devoted to the Administration were only about 10 percent of the total educational expenditures. Hence, on average, 90 per cent of the educational expenditures were available to the students and the teachers.

With the above information, we ran the log of GDP per capita, **L_GDPpc** as a function of the log of the educational expenditures, namely **L_EDUEXP**, in Table 3.0. Then we ran the log of GDP per capita as a function of the log of the educational expenditure to student ratio, namely **L_EXPstu** in Table 3.0. Finally we ran the log of GDP per capita as function of the log of the educational expenditures to the teachers ratio, that is the **L_EXPtea** component in Table 3.0. We present the results in the form similar to what we did in the context of GDP, Revenue and Expenditure per capita above.

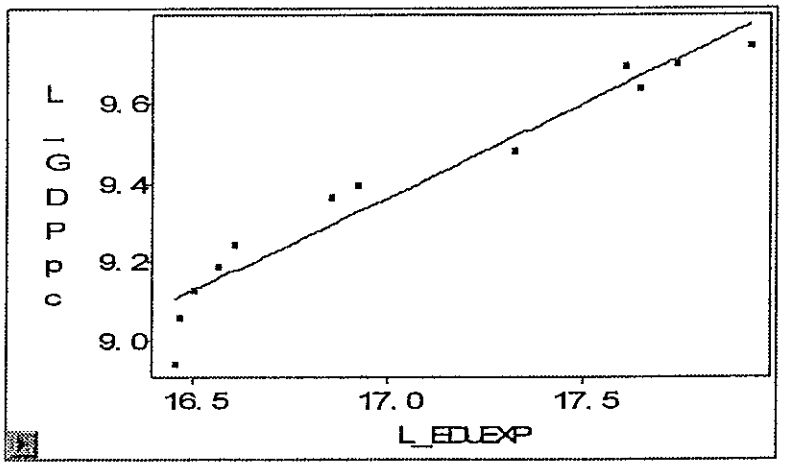
The model equation and the associated statistics show that coefficient of the log of the educational expenditures, namely **L_EDUEXP**, is very significant at **the one per cent level** of significance. The t-statistics is 12.18. The t-statistic is used to test the null

hypothesis that a parameter is 0 in the model. In this instance the coefficient of L_EDUEXP is statistically significant ($p \subseteq 0.0001$). The R-Square value is 0.9369, which means that 94 per cent of the variation in the log of GDP per capita is explained by the fitted model. The Adjusted R-Square is adjusted for the number of parameters in the model. It is very useful in models involving different numbers of parameters.

The tolerance and variance inflation statistics in the Parameter Estimate table are explained as follows. They measure the strength and interrelationship between and among the explanatory variable in the model. Tolerances close to 0 and large variance inflation factor values indicate strong linear association or collinearity among the explanatory variables (Rawlings, 1988, 277). For the GDP per capita data these statistics signal no problems of collinearity.

Model Equation

L_GDPpc = 1.3676 + 0.4700 L_EDUEXP



Summary of Fit

Mean of Response	9.3839	R-Square	0.9369
Root MSE	0.0722	Adj R-Sq	0.9306

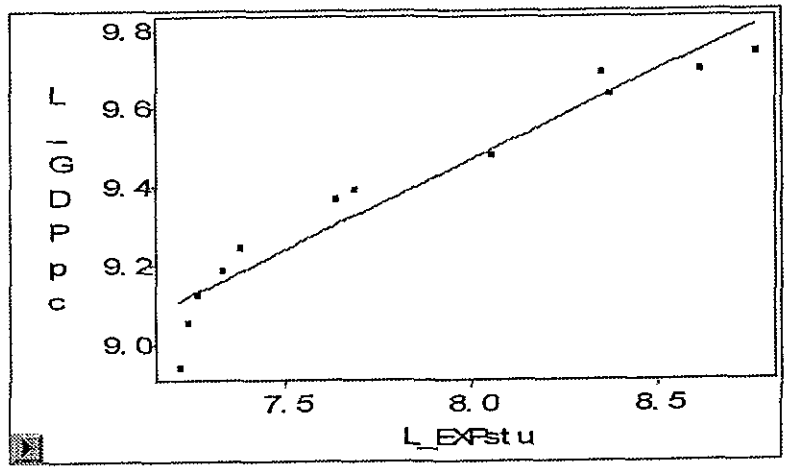
Parameter Estimates

Variable	DF	Estimate	Std Error	t Stat	Pr > |t|	Tolerance	Var Inflation
Intercept	1	1.3676	0.6584	2.08	0.0645	.	0
L_EDUEXP	1	0.4700	0.0386	12.18	<.0001	1.0000	1.0000

In the case of the model equation for the log of GDP per capita with respect to the log of the educational expenditure, we are able to explain 93 per cent of the variation and the statistics of 11.58 is very significant at the one per cent level of significance. Here, too, the tolerance and variance inflation factors indicate there are no problems of collinearity. This is clearly indicated from the collinearity diagnostics. A collinearity problem is said to exist when a component associated with a high condition index contributes to the variance of two or more variables. The highest condition value in the diagnostics box is 28.18. Belsley, Kuh and Welsch (BKW, 1980) note that a condition index of 30 to 100 indicates moderate to strong collinearity. In this instance the condition index is outside the range.

Model Equation

L_GDPpc = 5.8212 + 0.4554 L_EXPstu



Summary of Fit

Mean of Response	9.3839	R-Square	0.9306
Root MSE	0.0758	Adj R-Sq	0.9236

Parameter Estimates

Variable	DF	Estimate	Std Error	t Stat	Pr >|t|	Tolerance	Var Inflation
Intercept	1	5.8212	0.3085	18.87	<.0001	.	0
L_EXPstu	1	0.4554	0.0393	11.58	<.0001	1.0000	1.0000

Collinearity Diagnostics

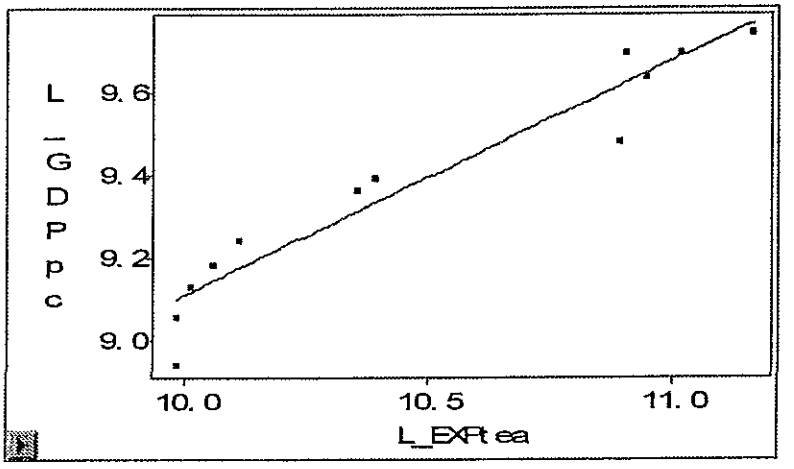
			Variance Proportion	
Number	Eigenvalue	Condition Index	Intercept	L_EXPstu
1	1.9975	1.0000	0.0013	0.0013
2	0.0025	28.1783	0.9987	0.9987

Finally, in the case of the log of GDP per capita as it relates to the log of the educational expenditures relative to the teachers, we note that this model, also, revealed a very good fit with an explanation of 92 per cent of the variation, and with a t-statistics of 10.79, significant at the one per cent level of significance.

There seems to be no collinearity on the basis of the tolerance and the variance inflation. However, given the fact that there is an almost linear combination of the dependent and independent variables, we performed the ***collinearity test***. There we noted that the condition index is 47.02. Given the BKW proposition of 30 to 100 indicating moderate to strong collinearity, we conclude that ***in the case of the log of GDP per capita and the log of education expenditures to teachers, there is moderate to strong collinearity.***

Model Equation

L_GDPpc = 3.4656 + 0.5645 L_EXPtea



Summary of Fit

Mean of Response	9.3839	R-Square	0.9209
Root MSE	0.0808	Adj R-Sq	0.9130

Collinearity Diagnostics

			Variance Proportion	
Number	Eigenvalue	Condition Index	Intercept	L_EXPtea
1	1.9991	1.0000	0.0005	0.0005
2	0.0009	47.0153	0.9995	0.9995

INSTITUTIONAL ISSUES IN HUMAN CAPITAL FORMATION

Let us now turn to some institutional and political issues underpinning human capital formation in St. Kitts and Nevis, over the period of analysis. First, we consider the ***mission statement*** and six of the ***ten key responsibilities*** of the Ministry of Education, Labor and Social Security. We use the year 2000 as a mode of departure. Second, from the statement and the responsibilities, we consider six areas of skills, and compare and contrast those areas of skills in the context of the population and the development of the country. Third, we make some forecasts, based on population, about what should be the skills in the areas over the next five years, using different forecasting scenarios (Seexx NAFE paper on different forecasting measures).

MISSION STATEMENT OF THE EDUCATION DEPARTMENT

> ***To provide for all citizens and residents, a comprehensive course of lifelong education to enable individuals to develop and achieve their full potential, in order to allow them to make a meaningful contribution to National Development. To foster and safeguard, without prejudice, amicable employment relationships between employers and employees, endeavoring to general welfare, industrial peace and harmony within the Federation. (St. Christopher and Nevis Estimates for the Year 2000, E.13, p. 210).***

Each department is expected to derive some key responsibilities in line with its Mission Statement. In the case of the Department of Education and the Mission Statement above, we selected, for discussion purposes, 6 of the 12 key responsibilities.

KEY RESPONSIBILITIES:

- Formulate, implement and administer an Education Policy and the delivery of education to all levels and to all ages.
- Provide high quality education for the maximum number of children in their early years of life and facilitate collaboration between the family (and the) community...

- Provide student counseling and career guidance.
- Provide training in specialist education post-secondary education; for example, teacher training and vocational and technical education.
- Maintain links with regional and international Tertiary Institutions.
- Upgrade the skills of young people in a non-formal environment and also of adult learners through the Adult Education Program. (St. Christopher and Nevis, ***Estimates For the Year, 2000***: 210).

Our focus now will be to consider 6 categories from the 12 categories of skills according to the 1991 Census, as reported in 1999. We will evaluate those skills in terms of their criticality to the human capital formation of St. Kitts and Nevis. In Table 5.0 we illustrate the 12 categories of skills for the population of St. Kitts and Nevis, age 15 years and older. The six starred categories are the categories that we will focus on. Each of these categories has 200 or more persons. Column two gives the rank importance of the skills categories. Columns three and four represent the data for males and females. What we intend to do is to focus on these six categories and use them as the basis for understanding where the State should focus over the next several years. Based on the earlier statistical results, we will make some suggestions about the need for the state to focus on other kinds of skills given the developmental thrust of the state.

When we consider the Mission Statement of the Ministry of Education, it seems that the State is on track in terms of what it planned to do. However, in light of the new reality of globalization, it may mean that the State may wish to focus on some other areas. In addition to that idea, the State may also wish to focus on its womenfolk to ensure that they, too, begin to benefit some more from skills which men seem to dominate. Having made these preliminary observations, let us now analyze Table 5.0 in some detail. We will focus on the starred items in that they are the items with over 200 persons per

TABLE 5.0 OCCUPATION SKILLS OF ST. KITTS AND NEVIS' POPULATION 15 YEARS AND OLDER, 1991 CENSUS

OCCUPATION	TOTAL	MALES	FEMALES	TOTAL RANK
Technical and Associated Professionals	1058	409	649	1*
Craft and Related Workers	1047	944	103	2*
Clerks	756	93	663	3*
Professionals	579	347	232	4*
Service and shop Sales Workers	484	247	237	5*
Legislative, Senior Officials and Managers	213	123	80	6*
Plant machinery Operators	105	64	41	8
Elementary Occupation	30	12	18	10
Hospitality Industry	23	15	8	9
Agricultural, Forestry and Fisheries Workers	19	18	1	11
Defense Force	6	6	0	12
Not Stated	184	96	88**	7

Source: ***St. Kitts and Nevis Digest of Statistics, 1999*** (Statistics Division, Planning Unit, Ministry of Finance, Development and Planning), p. 25.

* These are the top six categories

** This is not a category of skill. It is not known or a not stated category.

First, we note that in 1991, the population was 41,000. Of this number, 4,504 persons *(2,384 males and 2,120 females) were identifiable in skill categories* for which they were trained. Hence, 11.00% of the population was trained for particular skills. ***In 9 of the 12 categories, males dominated females. Conversely, in three of the twelve categories, women dominate men.*** The dominance, in percentage terms, is given in Table 6.0. If we omit the one category of the Defense Force, in which no women were listed, (although this seems strange), the percentage for male dominance ranged from 51 percent, in the case of "Sales and shop Sale Workers" to 95 percent in the case of Agricultural and Forestry and Fisheries.

Women, on the other hand, had percentage dominance that ranged from 60 percent, in the case of Elementary Occupation to 88 percent in the case of Clerks.

Using the data from Table 6.0 we show the female and male percentages of the skills, very conclusively, when we illustrate the graph for seven of the categories. The issue of

note is, can it be mere coincidence that in the Legislative, Senior Officials and Mangers category, men dominate women? We think not. Can it also be that in Plant Machinery Operators, men dominate women? There seems to be some unwritten codes that stipulate that women should be in some categories of jobs, and men should be in others. This creates a practical problem, from a long-run perspective. If human resources are understood to be of central moment in the development process in St. Kitts and Nevis, then it suggests that ***all human resources should be developed.*** It also means that all human resources should have access to all forms of development and not be circumscribed to male-oriented or female oriented jobs, as the case may be. The fact is, if it is true that there are still biases in job profile, then the economy as a whole will not be living up to its full potential.

Our focus now will be as follows. We will make a straight-line projectiòn of the skills categories, as listed in Table 6.0 and update those skills to the year 2000, less an arbitrary 10% attrition rate. We will then "forecast" up to the year 2004, using the year 2000 figures as the base of the forecast. We will use several methodsxxxsee Foresenic ecoppaer ppaer..... Of fundamental importance, we will consider six institutional and political issues as they are hypothesized to impact on policies and the development of policies.

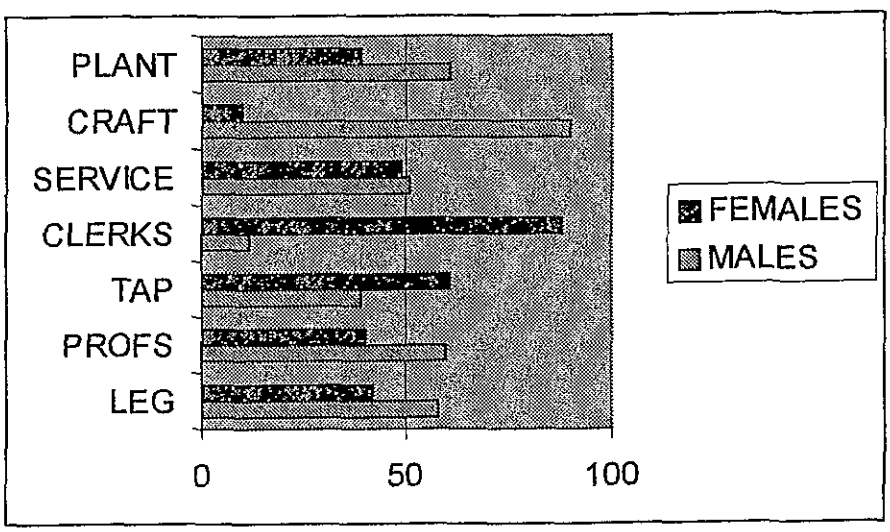
TABLE 6 .0 PERCENTAGE OF ST. KITTS AND NEVIS POPULATION 15 YEARS AND OLDER, 1991 CENSUS

OCCUPATION	TOTAL	MALES %	FEMALES %
Technical and Associated Professionals	1058	39	61
Craft and Related Workers	1047	90	10
Clerks	756	93	663
Professionals	579	60	40
Service and Shop Sales Workers	484	51	49
Legislative, Senior Officials and Managers	213	58	42
Plant Machinery Operators	105	61	39
Elementary Occupation	30	40	60
Hospitality Industry	23	65	35
Agricultural, Forestry and Fisheries Workers	19	95	5
Not Stated	184	52	48**

Source: ***St. Kitts and Nevis Digest of Statistics, 1999*** (Statistics Division)

** This is not a category of skills. This was listed as a not-stated category.

GRAPH 2.0: **AN ILUSTRATION OF SKILLS AMONG GENDERS**



Source: Table 6.0.

Plant = Plant Machinery Operators
Craft = Craft and Related Workers
Service = Service and Shop Sales Workers
TAP = Technical and Associated Professionals
Profs = Professionals
Leg = Legislative, Senior Officials and Managers
Clerks = Clerks

The six institutional and political issues are:

- **Three Hotels and two new casinos**
- **The revitalization of and the reentry of Port Zante to the Market**
- **The reduction in Sugar Agriculture**
- **Need to respond to WTO rules and regulations**
- **Legal skills needed to update laws to be in sync internationally**
- **An Expansion of the Foreign Service.**

PROJECTIONS OF SKILLS:

Based on the data in Tables One, Five and Six, we make some projections of what the skills should have been in the year 2000 and what skills could be in 2004. The data for 2004 are schematic projections using the 2000 population as a base, and ***assuming a 4.00% increase in population over the four-year period***. This 4.00% for the year 2004 is obtained by considering the growth over the period 1989 to 2000, and making the assumption that 50% of that growth will migrate. ***In 2004, we project the population to be 46,283, based on the 4.00% increase of the population.*** Given these data and assumptions, we show the skills categories for five main groups in Table 7.0:

TABLE 7.0: PROJECTED SKILLS IN ST. KITTS AND NEVIS IN 2000 AND 2004

SKILLS	TOTAL	MALES	FEMALES	TOTAL	MALES	FEMALES
	YEAR 2000			YEAR 2004		
TAP*	1148	448	700	1194	466	728
CRAFT	1136	1022	114	1181	1063	118
CLERKS	820	98	722	853	102	751
PROFS	628	377	251	653	261	392
SERVICE	525	268	257	546	279	267
LEG	231	134	97	240	139	101

Source: ***Projections based on Tables 1, 5, and 6.***

*** Legend key is the same as in Table 5.0**

HUMAN CAPITAL REQUIREMENTS

Based on the conservative and preliminary projections given in Table 7.0, and taking into consideration the implicit labor force of the seven institutional and political issues, it seems safe to conclude that the human capital requirements will not meet the human capital demands in the next four years.

It is projected that the ***three new hotels and the two new casinos*** would add another 1500 rooms to the existing room in the tourism industry. If this is so, then there ought to be now a massive training program to accommodate the human capital requirements in this area. This would mean that workers all across the spectrum should be trained now: Managers to waiters; Cooks to cleaners; Accountants to Front Desk Attendants; Computer Specialists; Air-conditioning personnel, and the rest. All of these types of skills would be required, and they would be required now. The hospitality industry would have to be expanded. It is to be noted that in the ranking of skills in Tables 5 through 7, the hospitality industry is not among the top-ranked areas.

By September 2002, ***the pier at Port Zante*** is expected to be back on line. At that time the pier would be able to accommodate two eagle-class ships which would bring about 3,000 to 4,000 passengers at any one time. It is proposed that there would be a Business Man's Hotel and a casino; a Marina; a Spa, a Deli a Chinese Restaurant (Already in place) and several other types of businesses, which cater to the tourist, trade. When Port Zante is put back in place there will be a need for more persons in the hospitality industry. As Port Zante assumes its rightful place in the overall scheme of the development of the tourism industry, it will have a multiplier effect that adds, significantly, to that effect emanating form the three new hotels and casinos at the Frigate Bay area. All of these would require expansion of the human capital in the hospitality sector.

The ***reduction in the Sugar Industry*** (or the rationalization or elimination, as some people say) will have a dire impact on the skills of the nation, especially St. Kitts. One of

the critical issues here will be the need to rationalize the transference of skills from the sugar industry to the hospitality. There is not a one-to-one correspondence of skills from sugar to tourism. The need for cross-training, new training and different training will be of central importance in the human development thrust.

The State of St. Kitts and Nevis is now going through the ropes of the rules and regulations of ***membership in the World Trade Organization (WTO)***. The very fact of this link requires that there be a movement to build capacity and critical mass in the human capital arena. Nearly every issue associated with the WTO requires that regulations be put in place and that people be put in offices to implement the regulations and or to monitor the rules. This means that small countries will find that their human resources bases will be stretched beyond what is perceived as tolerable limits.

In light of this reality, the State would have to move, expeditiously, to put in place the necessary human capital to facilitate the implementation of the rules and regulations and the other special operations that the WTO has made mandatory. Some people argue that the WTO is necessary in a world of globalization. What is abundantly clear, however, is that in this era of globalization, small size is an impediment to the smooth functioning of the requisite human resources capacity and critical mass that are needed to be put in place. That is why small countries or microstates, as we have long called them are demanding that there be ***special and differential treatment*** among countries with different levels of economic development. If there is no special and differential treatment, small economies will be at the peril of the WTO rules and regulations.

In the context of the WTO rules and regulations, there are two basic criteria that are used to recognize the special and differential treatment. One criterion applies to the category of ***Developing Countries***; this is almost a self-classification. The second criterion refers to ***Least Developing Countries***. The latter are countries with per capita income of less that US$1,000. By way of analysis, if we consider the current GDP per capita of all of the members of the Association of Caribbean States, we will note that only five countries have per capital GDP higher than St. Kitts and Nevis. These are Mexico (US$5,046);

Trinidad and Tobago (US$5,090); Antigua and Barbuda (US$9,231); Barbados (US$9,292) and the Bahamas (US$15,404). Furthermore, St. Kitts and Nevis' GDP per capita of US$4,642 is higher than the GDP per capita of Cuba (US$1113); Colombia (US$2,464); Jamaica (US$2,791) and Venezuela (US$4084), to name some countries (See ACS/2001/Trade.IX/INF.017, p. 4).

This GDP per capita number is extremely deceptive. What should be of central moment, as far as microstates are concerned, is the capacity of the countries to mount an economic platform and the critical mass of the people, human resources that must be of salience. The capacity of the Public Sector to generate revenues is also of extreme importance. Paradoxically, the small population of St. Kitts and Nevis has put it at a disadvantage. If the state of St. Kitts and Nevis is to adhere to the WTO rules, special and special and differential treatment must be applied. If not, there will be undue burden on its human resources capacity to comply with the rules and regulations.

Of great importance, also, are the demands ***that legal developments*** will place on the nation. With the accession to international Treaty obligations, St. Kitts and Nevis now finds itself into a bind as far as the update of its laws. There are myriad rules, treaty obligations, regulations to which the state has to agree or accede. The work load relevant to this type of international signature requires that human resources would have to be shifted from other priorities to areas that are considered urgencies in the legal area. In a state like St. Kitts and Nevis where the entire Legal Department may be just a microscopic branch in a larger state, undue pressure is brought to bear on the small state. Sometimes international agencies seem not to appreciate the gravity of the situation as they put in place rules and regulations that are, in a fundamental sense, mandatory acts that the states have to follow. Again, as we consider the skills in Tables 5 and 6 it is clear that work has to be done in the Technical areas to ensure that the requisite skills are in place to deal with the impact of the international legal imperatives.

A final issue that is of moment in the human resources issue is the demand of the demands deriving from ***the expansion in the Foreign Service.*** Today, more so than in the

past, small independent states are stretched to their limits as they seek to participate in the international arena. The states have to have a strong Foreign Service to deal in the arena of international trade, international and regional negotiations and to, above all, sell the good name and maintain the goodwill of the country concerned. That this is a massive burden is evidenced by the fact that St. Kitts and Nevis alone, is a member of over 190 international organizations and have an obligation of over US$10 million in annual dues or fees. There is not only a need to rationalize these organizations, there is a need to have the necessary human resources to fill the positions that organizations require. There is also a need to have the trained personnel to step up to the plate and assume leadership roles in the organizations. This requires that the School system and the Education Department and the Public Sector all work in a concerted fashion to produce and provide the necessary human resources to fill the matrices where international decision-making is implemented.

A NEW LOOK AT THE DIASPORA

For too long, countries in the Caribbean have looked at their national abroad, that is nationals outside of their borders as persons who are merely factors in the remittance stream. The nationals in the diaspora are generally not seen as part of the human resources matrix. In light of the now well-established fact that investment in education has very strong impact on education development, our suggestion is that states, such as St. Kitts and Nevis, small or microstates, must now begin to look beyond their borders to augment their human resources at home. In the early 1980's there was a notion that was current in the region that there ought to be pools of resources abroad, from which the region could tap. These pools of human resources were seen as pivotal to the momentum of the OECS. Today, more than before, we believe that we ought to revisit that concept of pools of human resources. Small countries cannot rely exclusively on the resources inside their borders. In the case of St. Kitts and Nevis, there are over 8,500 nationals in the USVI. That group should be seen as pool of expertise from which to draw. Nationals in the metroples or even in other Caribbean countries normally have access to higher educational opportunities than those at home do. And, invariably, they use the

educational opportunities. This suggests that the decision-makers in the home base should reach out to the nationals abroad as a means of supplementing the home base human resources capacity. In a world of globalization, human resources are available to all. Small States such as St. Kitts and Nevis have to face their destiny of human capital formation with a vision that is not a mere focus on the internal resources. The external resources should also be considered. In the last analysis, we would conclude by saying that in today's world, human resources in small states are necessary but not sufficient if the small states are to survive in the era of globalization.

Today, all countries around the globe face the challenge of accelerating change. In small countries, particularly microstates, that is states with populations less than 75,000 people will have to depend on their human resources to move forward expeditiously. Countries have to adapt and innovate quickly. The bottom line, however, is that countries have to spend on education. Education and economic development are inextricably linked. The current rules of engagement for upward movement, suggests that size must not be seen as a constraint to survival. Small countries have to "reinvent" themselves to be on the cutting edge of change. To do so, they all have to seriously focus on the human resources at home and abroad and use those resources to respond the international imperatives of growth, development and survival.

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