

Homogenous Economic Policy and Heterogeneous Consumer Economy: Empirical Analysis of the Vulnerability of the Regions to Macroeconomic Policy in Nigeria

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Abstract

This paper provides empirical evidence to show that regimented aggregate demand policy will probably be more appropriate for Nigeria given that the response of consumers to macroeconomic shocks is homogeneously tied around regional demand pattern. Result of the panel regression suggests that the effects of changes in income and price homogeneously cut across the six regions, while response to expected rise in unemployment is substantially linked to the predominant employment structure in the regions. Exchange rate is shown to be a weak expenditure-switching instrument of policy variable since it does not have any known consistent pattern of impact. The paper argues for movement away from aggregate to region-specific economic policies based on the demand dynamics of the zones.

Keywords: Nigeria, vulnerably, heterogeneous demand, homogenous economic policy, panel model

1. Introduction

This work is not aimed at cultural or ethnic comparison; neither is it aimed at attaching any religious or political relevance to the distribution of resources; rather that in a multicultural economy such as Nigeria, pattern of demand tends to be influenced to a very large extent by cultural and religious disposition. As a result, cost of resources distribution becomes inefficient leading to in-country income inequality and escalating poverty. Consequently government action aimed at achieving all-inclusive growth will be pervasive because a homogenous economic policy in a heterogenous consumer economy will leave some people more vulnerable than others - even if they live together peacefully; the absence of a common language and common norms reduces cooperation and increases the cost of transacting (W.Scully, 1995).

The growth question and convergence (absolute, conditional and club) hypothesis which sort to understand the differences in growth among nation –the so call growth-convergent dichotomy for many years turn away from the fact that the same question can be replicated (in-country) within a single and growing economy. But this time dealing with in-country differences resulting from multiculturalism and the attendant diverse demand pattern. Given the diversities across different ethnic groups there could be growth divergence associated with in-country inequality and poverty. This is because the political economy of a country can skew and reshape its growth pattern in such a way to favour some segment of the society which results from the application of aggregate economic policy that ignores multiculturalism.

The concept of multiculturalism, either from demographic, pragmatic or ideological point of view is gradually, but consistently being recognised by policy makers, social commentators, academics and the general public, particularly in the advanced economies. According to (Inglis, 1995) the rapid adoption of the term 'multiculturalism' has occurred in a situation where there is increasing international concern about the limitations of existing policies to address changing patterns of inter-ethnic relations. The current study is though not meant to go into the detailed analysis and definition of multiculturalism; but to follow the line of thought of the growing international recognition of the importance of ethnic diversity and the need for policy shift to address this country-specific diversity in policies and programs – implementation of economic policy based on cross-section pattern of demand. This does not only ensure optimal distribution of scarce resources, but cost savings in terms of efficient expenditure management. For detailed analysis and definitions and the contending issues relating to multiculturalism see the study by (Inglis, 1995),

Learning from the experiences of countries like Australia, Canada, and Sweden who have officially adopted multiculturalism as their model for managing cultural diversity, it is evident that the overall effectiveness of multiculturalism as a policy model depends not on any one program or policy initiative but on their cumulative effect, thus creating more role for the of Government in a market economy. The limited role ascribed to Government in a market economy notwithstanding, there is the acknowledgment that the public sector should try to help the economy through allocation and re-allocation (redistribution of income) of resources, efficiency in the use of

resources and attaining full employment, low and stable inflation, reduce scarcity, and more importantly achieve general economic stability and growth. This is done by designing and implementing a budget policy that ensures the optimum allocation of resources and determination of public-private goods mix. Thus budget provides the platform to assess the economic position of the economy, financial resources information, expenditure distribution, income and wealth distribution, indications of economic policies and strategy, prioritization of sectors – external and domestic (consumers and producers), and employment.

The determination of actual expenditure levels for optimal resources distribution and growth stabilization has evolved overtime with attendant refinements. One of the growing measures of ensuring efficient allocation of government expenditure across different economic agent in an economy is the Medium Term Expenditure Framework MTEF. The revolutionary trend brought by the Medium Term Expenditure Framework (MTEF) approach is a response to the challenges of macroeconomic balance, strategic allocation of resources, and operational. It attempts to improve the decision-making process so as to link Government policies, priorities and requirements with limited resources. This is also sacrosanct with development strategy which defines the central role and overriding national objective of macroeconomic policy in the areas of growth, poverty reduction, distribution and sustainability, <http://www.guyana.org/NDS/chap06.htm>.

Accordingly, improving the basis of the budget by moving away from the incremental approach to estimating the actual costs of Government activities in delivering goods and services and integrating the preparation and presentation of the recurrent and development budgets is necessary for achieving effective aggregate demand policy. In some countries such as Nigeria the budget is prepared with surprisingly little reference to the macroeconomic demand pattern or priorities. Rather higher weight is attached to balancing regional quota and the federal character without recourse to understanding the demand dynamics of the regions. This kind of problem arises because, oftentimes, there is little macroeconomic analytical capacity in the government, or the budget department has no contact with those who are capable and undertaking such analysis (Potter & Diamond, 1999). The absence of proper understanding of the relative economic needs of citizens in many occasions lead to wrong prioritization of government policy objectives, thus resulting to low outcome, non-distributive and defective. Thus aggregate demand policies will be easier and more effective if the macroeconomic constraints are linked to priority areas as it affects each homogenous group of consumers.

There is emerging body of literature which tends to question the possibility of optimal distribution of resources and efficient homogenous Government spending in a multicultural society with heterogeneous pattern of consumption. It documented a negative relationship between heterogeneous ethnic composition and economic growth, particularly in Sub-Saharan Africa where cultural and religious conflicts are difficult to manage. The special focus on consumption dynamics and multiculturalism has become increasingly necessary because even in countries like USA where conflicts arising from ethnic heterogeneity have been successfully tamed, individualism is giving way for group rights (W.Scully, 1995). Moreover understanding the cross-country differences in growth require understanding of the relationship between growth and public policies, as well as why countries choose varying public policies. In Sub-Saharan Africa, of the entire growth problems associated with low schooling, political instability, underdeveloped financial systems, distorted foreign exchange market, high government deficits, and insufficient infrastructure; high ethnic fragmentation was reported by (Easterly, et al., 1997) to substantially explain significant part of most of these problems. This is because in such economy, the distribution of resources could be efficient but the resulting income distribution may be socially unacceptable as a result of the complex nature of the society; thus as government redistributes income, it sacrifices efficiency in the name of equity.

2. Knowledge gap in perspective

The main purpose of this study is to show that, because demand pattern differs across the six regions that make up Nigeria (Oduh, et al., 2012), the response of households in these regions to economic policy differ, considerably. The implication being that using a homogenous or aggregate policy to address such regimented demand pattern may as well have its shortcomings. Therefore one cloth fits all kind of economic policy might not be able to address the human consequences of rapid economic adjustment in a diverse economy like Nigeria.

Nigeria, Africa's most populous (more than 170 million) country, is made up of more than 250 inexhaustible ethnic groups with more than 500 varying indigenous languages and customs, creating a country of rich ethnic diversity. Of these numerous ethnic groups and languages, the largest ethnic groups are the Fulani/Hausa, Yoruba, Igbo, accounting for 68% of population; Ijaw, Kanuri, Ibibio, and, Tiv accounts for 20%; while the other groups account for the remaining 12% (CIA, 2012). The ethnic groups irrespective of language and religious affiliations are categorized into two (North and South) generic geopolitical regions with six sub-sets of zones, namely North-central, North-east, North-west comprising the Northern region; South-east, South-south, and South-west comprising the Southern region. Economically, the Northern region which is predominantly into agriculture is the poorest with average poverty rate of 73.8% as against 63.3% of poverty rate in the Southern region. In spite of these obvious diversity which in most cases influences their pattern of consumption and demand (Oduh,

2012b) macroeconomic policies in Nigeria are designed without due cognisance of its diverse effects; neither is there expenditure prioritization on the basis of these multiculturalism, leaving economists and policy makers wondering if the success or failure of economic policies in Nigeria are an outcome of good policy implementations or luck.

Drivers of Government policies in Nigeria are said to confuse success due to luck with success derived from careful planning and hard work. As a result the management of an aggressive public expenditure policy that addresses the economically deprived regions at a time of fiscal consolidation are hardly addressed (Bismarck Rewane, 2011). This problem arises because designs of macroeconomic policies are suggestive of homogenous pattern of demand; while ignoring the fact that across the regions (North-central; North-east; North-west; South-east; South-south; and South-west) the heterogeneity of demand is such that what works for a particular set of consumers might not work for others. Consequently, economic choices are driven by either cultural or religious or both factors, resulting to loss in technical and allocative efficiencies (W.Scully, 1995). Writing about the European single market (Canoy, et al., 2006) observed that services are notoriously heterogeneous such that what works for one service may not work for the other. The study highlighted on the need to understand the differences in consumer preferences or information deficiencies about the availability of specific services for the realization of the full potential of single market economy. Therefore the design of policy reform must rest on a firm basis of evidence and analysis and proper understanding and grasp of the challenging issues (Collier, et al., 2008).

The diversity in Nigeria's socioeconomic, cultural and religious disposition in several respect plays-out in the regional consumption pattern such that a one-tailor fits all approach in macroeconomic policy have never and may never work. Because demand pattern differs, how consumers in these regions are affected is determined to a very large extent by their demand dynamics; and how they respond to changes in macroeconomic policies that drive this demand will also determine the effectiveness of macroeconomic policies that addresses these challenges. Government spending in Nigeria like most countries in the world forms a sizeable proportion of the aggregate demand, hence total economic activity. However, the decision to mobilize resources and allocate resources efficiently perhaps remains one of the most pervasive challenges among all the three levels of government. In fact the poor dispensation of government priority spending has led to the establishment of the fourth tier of government – community government in Imo state the South-eastern part of Nigeria. The poor delivery of government projects and the attendant poor outcome is without prejudice to the fact that public expenditure has increased rapidly as a result of growing population and highly volatile macroeconomic environment; thus the economic effects of public expenditure remains relatively unexplored (Aruwa, 2010).

The scientific contribution of this work therefore, is to demonstrate that how each of the six zones reacts to changes in macroeconomic fundamentals; and how symmetrically macroeconomic shocks are felt in different parts of the country mirrors the vulnerability of regions to macroeconomic shocks. This provides information on government macroeconomic policies that will have homogenous effects and those that will have heterogeneous effects on the basis of the regional inclination of household; as well as provide insight and direction for Government budget prioritization.

3. Methodology

We first used the same quarterly (2009Q2-2012Q1) panel data application and estimation in (Oduh, et al., 2012) and reproduce the same result which had assumed a common (homogenous effect of the regions to macroeconomic shocks) cross-section effect and coefficient for the entire region, but for brevity the result is not displayed here. For details see “understanding of the predictors of consumer sentiments: lessons for inflation targeting prospects in Nigeria”. Next we re-estimated the same model by decomposing the common coefficients into region-specific coefficients after which we tested for cross-section fixed effects.

The model was estimated as seemingly unrelated regression SUR. The six geopolitical zones that constitute the cross-section units are North-central, North-east, North-west, South-east, South-south, and South-west. The fixed effect model assumes a constant slope, but different intercepts across the zones. That is the model assumes no significant country differences (variables are homogenous), but might have varying effects owing resulting from group-specific characteristics, such as religion, occupational distribution across the zones, differences in political acceptability of policy shifts, and time lag of policy effect on the zones. For example the North is predominantly engaged in agriculture, South-west are industrialists and mainly in paid-employment, while the South-east is predominantly engaged in commercial activities. In terms of religion, the north is predominantly Moslems, while the south is predominantly Christians. These variations are expected to affect both the size of household and demand pattern as stated in (Oduh, et al., 2012); and (Oduh, et al., 2012).

3.1 Model Specification

Variety of macroeconomic variables affect consumer confidence, including prices of durables and non-durables, expectations of future income and employment, the current level and expectations of future interest rate movements, trends in unemployment and changes in perceived job security, money supply and monetary policy rate,

anticipated changes in government taxation and subsidy, changes in household wealth including movements in house and share prices (Oduh, et al., 2012); (AmosWEB, 2012); (Chris G.Christopher, 2011); (Ferguson, 2011); (Çelik, et al., 2010); (Mendonça, 2009); and (Ludvigson, 2004).The choice of variables in the current study is guided accordingly, but paying attention to the country's peculiarity as well as data limitation.

3.1.1 Model with Cross-section common effects

$$CCI_{it} = \alpha + \beta_i x_{it} + \mu_{it} \quad (1)$$

where $i = 1, 2, \dots, 6$ cross-section units of the six geopolitical zones in Nigeria and periods $t = 2009Q2$ to $2012Q1$, while μ_{it} is the one-way error term. The dependent variable (CCI) represents cross-section of consumer confidence which mirrors household reaction to changes in macroeconomic variables. The explanatory variables (x) contains sets of cross-section specific coefficient such as, current income (Y0), expected income in the twelve months (Y3), consumer price index of durables (CPID), consumer price index of food (CPIF), savings/deposit rate (SAV), and index of expected change in official exchange rate (EXR).

3.1.2 Model with cross-section specific effects

$$CCI_{it} = \alpha_{it} + \beta_i x_{it} + \varepsilon_{it} \quad (2)$$

The error component disturbances is decomposed into individual region fixed effects (ε_i), and other disturbances term (v_{it}). This is as specified in case (3).

$$\varepsilon_{it} = \varepsilon_i + v_{it} \quad (3)$$

We also account for variations across the regions by introducing pool fixed effects. This is introduced by using different intercepts estimated for each pool member. The fixed effect is as defined in case 3.

$$\alpha_{it} = \alpha_{it}^{\text{pool}} \quad (4)$$

3.2 Identification of variables and data handling

For cross identification of the variables in the pool, the following identifiers were used: _NC (North-central); _NE (North-east); _NW (North-west); _SE (South-east); _SS (South-south); and _SW (South-west).

4. Analysis of results

Econometric results obtained from fixed effects test and seemingly unrelated regression equation RUR are presented in tables 2 and 3 (appendix A). Table 2 shows presence of fixed effects across the regions. When common coefficient is estimated as in (Oduh *et al*) for the regions, they display no (common) effects; but when disaggregated they show evidence of fixed effects. The implication being that the aggregation of regions for policy implementation is prone to loss of information about the demand dynamics of the regions. And because this information is not captured one will also expect a welfare loss resulting from the non-implementation of all inclusive economic policy. For brevity, North-central, North-east, and North-west zones are grouped under Northern region; while South-east, South-south, and South-west zones are analysed under Southern region. Finally, for model simplicity we marginalised all the variables that did not contribute to the explanatory power of the system in either of the zones and re-estimated the model.

4.1 Income (INC0 and INC3)

Income is disaggregated into current (INC0) and expected (INC3) income. The expected income is proxied with consumer outlook of expected income in the next 12 months, while current income is household income in the current quarter – short and long run income.

North-central (NC) responds positively to both the short and long run increase in income, but relatively attach higher weight to long run income as shown in table 3 (frame 1 appendix A). Increase in current and expected income by 10% boosts consumption sentiments of household in the zone by 2.2 % and 3.5% (1% significant level) respectively. Also following the same trend, households in the North-east (NE) and North-west (NW) respond positively and significantly to both short and long run income shocks; but with higher weights attached to short run income; perhaps a reflection of the importance of the short run marginal propensity to consume MPC over the long run MPC as highlighted in (Oduh *et al* 2012). A 10% increase in current and future income increases consumer confidence in the two zones by 6.0% and 3.3% (North-east) and 7.4% and 2.2% (North-west) respectively, table 3 (second and third frame appendix A). In-fact the effect of SR income of households in the North-west zone is approximately three-times the LR effects. Incidentally, this zone is the poorest (table 1 ap-

pendix A) and according to NBS spends more on food than every other zone in the country. Instructively, the relative larger weights attached to short run income in two out of the three zones in the entire Northern region also reflect the importance of immediate consumption and the poor savings habit and the extent of poverty in the region.

Contrary to the average short run consumption behaviour observed in the Northern region, households in the Southern region are forward-looking and have their eyes on tomorrow; hence the higher weights attached to long run income shocks. In the South-east (SE) zone for instance, the effect of short run (0.39) increase in income on households is approximately two-times less than the long run (0.89) effect. This result is consistent with the intuitive reasoning of the commercial exploits of those in the zone – the savings habits and asset acquisition of the Igbos. The result shows that a 10% increase in short and long run income increases their confidence by 3.9% (current) and 8.9% (expected); and are statistically significant at 1% (forth frame table 3). The South-south region also maintains this same trend. Table 3 (fifth frame appendix A) shows that an increase of 10% in current and expected income increases consumer confidence in the zone by 1.3% and 6.1% respectively. Also following the same pattern, confidence of households in the South-west (SW) is positively affected by increase in current and expected income. A 10% increase in current and expected income increases consumer confidence by 4.4% and 7.8% respectively at 1% level of significance, table 3 (fifth frame appendix A).

Generally, households in the Southern region are long run consumers compared with those in Northern North; which theoretically reflects forward-looking and savings habit of those in the southern part. The short run consumption of the Northern region (North-east and North-west) runs contrary to the theoretical assumption which posits that the variability of income determines the size of MPC. Households in the Northern part of the country are predominantly engaged in agriculture; as such one expects that since income from agriculture is seasonal, farmers should save more now to consumer tomorrow when income is low- farming season.

4.2 Unemployment rate (UNR)

Unemployment rate is an index which captures household reaction to changes in future unemployment rate. Currently, unemployment rate in Nigeria is conservatively estimated to be in the neighbourhood of (18% urban and 26% rural) 24% by NBS. In this section, we examine how households in different zones will react or is affected by the expected rise in unemployment – supposedly above the current rate, since unemployment index used in the survey depicts outlook in the next 12 (twelve) months. In table 1 we present trends in Small and Medium Enterprises (SMEs) and poverty incidence across the zones to show variations in self-employment as well as their level of vulnerability to poverty in 2010.

North-central and North-west for whatever reason displayed surprising positive relationship between expected unemployment and household confidence. Perhaps because they are predominantly farmers, as such a rise in unemployment positively correlates with increase in labour supply which also leads to fall in wage rate in the agricultural sector. This positive and significant relationship however, may require further scrutiny. On the other hand North-east conforms to significant and negative *a priori* relationship between expected unemployment and consumer confidence. Expected rise in unemployment by 10% have a dampening effect on consumer confidence in the NE zone by 2.0%, table 3 (second frame appendix A).

The three zones (South-east, South-south, and South-west) in the Southern region are expected to react negatively to expected rise in unemployment. The result shows that if consumers in this region expects a 10% rise in unemployment, there confidence on the economy dampen by 2.2% (South-east); 2.3% (South-south) and (South-west) respectively. Of the three zones, the SE attaches less weight to unemployment which also reflects the fact that the zone predominantly engages in commercial activities and less of wage-paid employment relative to the other two zones in this region

4.3 Prices of durables and non-durables (CPID and CPIF)

The CBN survey captured the impact of durables and non-durables by looking at the index of favourable outlook of consumers to purchase durable and non-durables in the next 12 months. Though the survey was silent on the parameters used by consumers in determining favourable and non-favourable buying conditions, but we can use economic theory as guide. There are two dominants economic factors in this regard, income and prices of durables and non-durables. That is consumers will favourably purchase a commodity, in our case durables and non-durable if their prices fall at a given income level.

The result shows that North-central which is the richest in the Northern region reacts positively even if the buying conditions of both durables and non-durables are not favourable, but attach higher weights to durables; while North-east and North-west the poorest in the region as well as the country react negatively to upward movements in prices of durable and non-durables, with North-west attaching more weights (0.76) and relevance to durables. If buying condition of durables and non-durables worsens by 10% consumer confidence in the North-east declines by 1.9% (durables) and 1.8% (non-durables); while in the North-west it declines by 9.1% (durables) respectively.

On the other hand in the Southern part it is only the South-east that reacts negatively to unfavourable buy-

ing condition of both durables and non-durables, but with higher weights attached to durables. If buying condition worsens by 10% consumer confidence in the SE declines by 6.6% (durables) and 1.4% (non-durables). South-south (second richest in the country) statistically does not bother about unfavourable movement in the prices of non-durables, while South-west surprisingly reacts negatively to increase in the prices of non-durables, but worry less, statistically about price of durables. If buying condition of non-durables dampens by 10% households in the South-west are affected negatively by about 1.6%.

The case of south-west (richest in the country) presents a challenge to theoretical underpinning which tends to suggest that affluence is associated with less expenditure on non-durables, particularly food. It goes to suggest that affluence in Nigeria is associated with large families and dependants hence increase in the demand for food and other non-durables. This perhaps explains the negative reaction of high income zones to increase in the prices of non-durables. Also see the study by (Oduh, 2012b) on the difference between statistically and economically growing middle class and the dynamics of poverty and income distribution in Nigeria.

4.7 Savings (SAV)

As shown in the determinants of planned spending (Oduh, et al., 2012), there is poor savings habit at the aggregate level occasioned by weak interest rate as a transmission mechanism that links monetary and the real sector. The same scenario played-out at the regional level as two out of the six zones have good outlook to increase spending on savings.

In the Northern region, only the consumers from the North-west express the optimism to increase expenditure on savings if there is positive economic shock, while the North-central and North-east are not perturbed.

In the Southern region, the South-east expectedly shows readiness to expend more on savings when there is positive economic shock. The South-south and South-west are not favourably disposed positively or negatively to increase saving irrespectively of the direction the economy is heading to.

4.8 Exchange rate (EXR)

All over the world, there is controversy about the required level of exchange rate appreciation that is sacrosanct with the developmental need of the developing countries. While some favour depreciation so as to increase the competitiveness of exports, others favour exchange rate appreciation which follows that argument for import dependent nation like Nigeria. The same mixed reactions showed-up in the result in table 3.

North-east and North-west favour exchange rate depreciation and appreciation respectively; while North-central is unperturbed. A 10% increase (depreciation) in exchange rate positively affects the economy outlook of households in the North-east by 0.5%; while North-west is negatively affected by 1.2%

The same mixed reaction played-out in the Southern region as South-east favours appreciation, while South-south and South-west favour depreciation. Exchange rate appreciation by 10% boosts the sentiments of consumers in the south-east by 2.4%, while the South-south and South-west are negatively affected by 2.2% and 0.9% respectively.

The general trend in exchange rate across the zones shows that it does not have any known consistent pattern; thus posing a serious challenge for expenditure switching policy. While the North-west, South-east and the South-west favour exchange rate appreciation; North-central, North-east and South-south favour depreciation.

5. Conclusion

The study investigated the responsiveness of regions to macroeconomic policy using consumer confidence as a proxy. Macroeconomic variables used in the analysis include current and expected income, prices of durables and non-durables, exchange rate expectation, expenditure on savings, and expected unemployment rate index. To account for variations in demand, fixed effect panel regression was estimated as SUR, accounting for cross-section weights. For detailed insight into the macroeconomic variables that account for changes in consumer confidence, income and prices were disaggregated into current income, and expected income; while price was decomposed into durables and non-durables.

The paper avers that income policy be applied at the aggregate level since all the regions are simultaneously affected by changes in income. In the alternative price policy can be used because it has a systemic and definable impact across the regions. In this way real income can be manipulated depending on the policy objectives. In terms of employment, households from the Southern part of the country will more probably favour wage-paid employment policy; while those from the Northern region will favourably be impacted by self-employment policy. On the other hand exchange rate will be a weak expenditure-switching policy because it does not have any systemic or consistent pattern of impacts.

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Appendix A: Presentation of results

Table 1: Zonal Distribution of Small and Medium Enterprises and Poverty Incidence in Nigeria, 2010

ZONE	Small Enterprises (SEs)		Medium Enterprises (MEs)		Total	National Incidence of SMEs (%age)	Incidence of Relative Poverty
	Number of (SEs)	%age	Number of (MEs)	%age			
NORTH-CENTRAL	2960	645.6	262	54.4	3222	14.1	67.5
NORTH-EAST	1480	546.9	138	53.1	1618	7.1	76.3
NORTH-WEST	4682	657.4	328	42.6	5010	21.9	77.7
SOUTH-EAST	2350	468.6	170	31.4	2520	11.0	67.0
SOUTH-SOUTH	2864	557.6	208	42.4	3072	13.4	63.8
SOUTH-WEST	6928	5732.0	546	27.0	7474	32.6	59.1

Source: Based on NBS-SMEDAN survey, 2010

Table 2: Redundant Fixed Effects Tests

Test cross-section fixed effects

Effects Test	Statistic	d.f.	Prob.
Cross-section F	3.789304	(5,24)	0.0114*

Table 3: *Seemingly Unrelated Regression estimates of predictors of consumer confidence*

System: SYS01FIXEDEFFECT

Estimation Method: Seemingly Unrelated Regression

Sample: 2009Q2 2012Q1

Total system (balanced) observations 72

Linear estimation after one-step weighting matrix

	Coefficient	Std. Error	t-Statistic	Prob.
NORTH-CENTRAL				
C(43)	-14.27093	3.802560	-3.752980	0.0006
C(1)	0.215285	0.041538	5.182887	0.0000
C(7)	0.346781	0.040230	8.619958	0.0000
C(13)	0.262762	0.047952	5.479666	0.0000
C(19)	0.323192	0.063489	5.090517	0.0000
C(25)	0.241898	0.050193	4.819364	0.0000
NORTH-EAST				
C(44)	31.71157	3.269343	9.699677	0.0000
C(2)	0.598153	0.054995	10.87655	0.0000
C(8)	0.325008	0.013186	24.64843	0.0000
C(14)	-0.195957	0.045704	-4.287492	0.0001
C(20)	-0.187522	0.038945	-4.815116	0.0000
C(26)	-0.175857	0.021459	-8.195007	0.0000
C(38)	0.051527	0.016760	3.074427	0.0041
NORTH-WEST				
C(45)	21.24711	5.046716	4.210086	0.0002
C(3)	0.742316	0.068385	10.85496	0.0000
C(9)	0.218565	0.049716	4.396255	0.0001
C(15)	0.207602	0.098999	2.097020	0.0433
C(21)	-0.910613	0.140713	-6.471412	0.0000
C(33)	0.329929	0.083442	3.954005	0.0004
C(39)	-0.116874	0.036357	-3.214643	0.0028
SOUTH-EAST				
C(4)	0.389979	0.036043	10.81993	0.0000
C(10)	0.886978	0.033389	26.56465	0.0000
C(16)	-0.224295	0.039097	-5.736923	0.0000
C(22)	-0.661643	0.055201	-11.98616	0.0000
C(28)	-0.142549	0.019523	-7.301434	0.0000
C(34)	0.458446	0.042315	10.83415	0.0000
C(40)	-0.235795	0.024227	-9.732885	0.0000
SOUTH-SOUTH				
C(5)	0.131180	0.038392	3.416828	0.0016
C(11)	0.607205	0.038989	15.57377	0.0000
C(17)	-0.234695	0.050490	-4.648323	0.0000
C(23)	0.218889	0.055516	3.942834	0.0004
C(41)	0.132053	0.033790	3.908061	0.0004
SOUTH-WEST				
C(6)	0.437433	0.094384	4.634628	0.0000
C(12)	0.779616	0.070364	11.07980	0.0000
C(18)	-0.233374	0.076826	-3.037696	0.0045
C(30)	-0.163439	0.070229	-2.327244	0.0259
C(42)	0.094282	0.043083	2.188376	0.0354
Determinant residual covariance		0.023160		

$$\text{Equation: } CCI_NC = C(43) + C(1)*INC0_NC + C(7)*INC3_NC + C(13) \\ *UNR_NC + C(19)*CPID_NC + C(25)*CPIF_NC$$

Observations: 12

R-squared	0.894695	Mean dependent var	35.77500
Adjusted R-squared	0.806941	S.D. dependent var	14.23192
S.E. of regression	6.253285	Sum squared resid	234.6215
Durbin-Watson stat	2.278698		

$$\text{Equation: CCI_NE} = C(44) + C(2)*\text{INC0_NE} + C(8)*\text{INC3_NE} + C(14) \\ * \text{UNR_NE} + C(20)*\text{CPID_NE} + C(26)*\text{CPIF_NE} + C(38)*\text{EXR_NE}$$

Observations: 12

R-squared	0.958420	Mean dependent var	25.32500
Adjusted R-squared	0.908525	S.D. dependent var	12.10245
S.E. of regression	3.660372	Sum squared resid	66.99161
Durbin-Watson stat	2.080996		

$$\text{Equation: CCI_NW} = C(45) + C(3)*\text{INC0_NW} + C(9)*\text{INC3_NW} + C(15) \\ * \text{UNR_NW} + C(21)*\text{CPID_NW} + C(33)*\text{SAV_NW} + C(39) \\ * \text{EXR3_NW}$$

Observations: 12

R-squared	0.823101	Mean dependent var	33.15833
Adjusted R-squared	0.610822	S.D. dependent var	8.669849
S.E. of regression	5.408613	Sum squared resid	146.2655
Durbin-Watson stat	2.263044		

$$\text{Equation: CCI_SE} = C(4)*\text{INC0_SE} + C(10)*\text{INC3_SE} + C(16)*\text{UNR_SE} + \\ C(22)*\text{CPID_SE} + C(28)*\text{CPIF_SE} + C(34)*\text{SAV_SE} + C(40) \\ * \text{EXR_SE}$$

Observations: 12

R-squared	0.927513	Mean dependent var	32.13334
Adjusted R-squared	0.840529	S.D. dependent var	9.061139
S.E. of regression	3.618459	Sum squared resid	65.46624
Durbin-Watson stat	2.664311		

$$\text{Equation: CCI_SS} = C(5)*\text{INC0_SS} + C(11)*\text{INC3_SS} + C(17)*\text{UNR_SS} \\ + C(23)*\text{CPID_SS} + C(41)*\text{EXR_SS}$$

Observations: 12

R-squared	0.914722	Mean dependent var	30.22500
Adjusted R-squared	0.865992	S.D. dependent var	9.696216
S.E. of regression	3.549509	Sum squared resid	88.19311
Durbin-Watson stat	1.743277		

$$\text{Equation: CCI_SW} = C(6)*\text{INC0_SW} + C(12)*\text{INC3_SW} + C(18) \\ * \text{UNR3_SW} + C(30)*\text{CPIF_SW} + C(42)*\text{EXR_SW}$$

Observations: 12

R-squared	0.897005	Mean dependent var	39.05000
Adjusted R-squared	0.838151	S.D. dependent var	11.03725
S.E. of regression	4.440340	Sum squared resid	138.0163
Durbin-Watson stat	1.726487		

Legend: **1%;*5% significant level