AFSSRNews Section

AFSSRNews is the Newsletter
of the Asian Fisheries Social Science Research Network

Editorial

Asian Fisheries Social Science Research Network: A Transformation

The Asian Fisheries Social Science Research Network which has existed as a project under ICLARM since 1984 is now transforming into an organization under the Asian Fisheries Society. A constitution for the new Network under the Asian Fisheries Society has been drawn up. As agreed by members of the AFSSRN at a meeting in Bali in March 1996, the members of AFSSRN will now join the Asian Fisheries Social Science Research Network section of the Asian Fisheries Society. During that meeting, it was agreed that the network should continue to exist even though the project, largely supported by the International Development Research Centre of Canada (IDRC) and ICLARM, ended on 31 March 1996. The Network grew from a team of social science researchers from Malaysia, Indonesia, Philippines, and Thailand working on various projects funded by IDRC and ICLARM to over 100 members working on a broad range of social science issues on living aquatic resources management. The Network enabled the interaction between and the development of expertise among researchers in the region in the areas of fisheries and aquaculture management. It was also agreed at the meeting that Dr. K. Kuperan Viswanathan from the Department of Natural Resource Economics, Faculty of Economics and Management, Universiti Pertanian Malaysia, will act as the interim Chairman for the Network and will work on the procedures to complete the transformation of the AFSSRN from a project to an entity which will have life beyond 31 March 1996. Dr. Robert Pomeroy, who has been the Coordinator of the Network, agreed to work with Dr. Kuperan to allow for the transformation. Dr. Pomeroy will be the Vice Chairman for the interim period. ICLARM considers the Network an important grouping that can complement and help in its mandate to improve the livelihood of fishers in the region through useful research that will have positive influence on fisheries development policy in the region. ICLARM has indicated a commitment to provide some funding for the Network to carry out an annual meeting or workshop and also to provide space in *Naga, the ICLARM Quarterly* for the AFSSRN to write about news and activities of AFSSRN. ICLARM will appoint the Vice Chairman of the AFSSRN while other office bearers of the Network will be elected during the annual meetings.

The new AFSSRN is open to members from all parts of the world. All Network members should submit membership forms to the Asian Fisheries Society so that you can become a member of the AFSSRN. I hope this will lead to much more interaction with fisheries social scientists from different parts of the world and improve the Network further. If you have any queries or need any clarification, please get in touch with Dr. Kuperan Viswanathan or Dr. Robert Pomeroy at the following e-mail addresses: KUPERAN@ECON.UPM.EDU.MY or R.POMEROY@CGNET.COM.

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Changes in Consumer Tastes in the Demand for Fish and Meat in Malaysia

Nik Mustapha R. Abdullah

Introduction

Malaysia is a relatively small multi-racial and multi-religion maritime country in Southeast Asia. Fish and meat products contribute significantly to the protein intake of the Malaysian population. In 1990, per capita consumption for beef, poultry, mutton and pork were estimated at 3.49 kg, 20.40 kg, 0.50 kg and 10.29 kg, respectively (DVS 1990). In 1990, per capita fish consumption in Malaysia was 40 kg per annum, its highest in over a decade. This high per capita fish consumption is consistent with a worldwide trend, where fish is preferred over other meat not only for health reasons but also because it is the cheapest form of protein meat available; moreover, it is acceptable to all races in Malaysia. Fish dominates meat consumption both in terms of average per capita consumption and budget shares allocation of each meat type (Figs. 1 and 2). From 1960 to 1990, fish consumption in Malaysia increased threefold accounting for, on average, about 57% of the consumer's total meat expenditures. This is followed by pork at 32.9% and chicken at 13.45%, while beef and mutton accounted for 4.36% and 2.09%, respectively.

The purpose of this article is to estimate the demand for fish and its substitutes using a very flexible demand function, the Almost Ideal Demand System (AIDS) developed by Deaton and Muellbaeur (1980), incorporating the habit formation variable to measure the impact of the changes in tastes in consumer demand for fish and meat products from 1960 to 1990 in Malaysia. Information on price and income elasticities for these meat groups will also be

obtained. To incorporate consumption habit variables, the "dynamic translating" procedure proposed by Pollak (1970) and Pollak and Wales (1981) has been adopted. The AIDS model with habit formation variables is popularly known as the "dynamic AIDS."

Studies on changes in the food consumption behavior among households are of interest to policy makers as they explain how total household expenditures are allocated among various goods and services. Empirical research on demand for fish and other meat products in this country is fairly recent. Although these studies provided estimates of meat consumption parameters which are useful for agricultural decision makers, they drew limited attention among researchers. Some earlier demand studies on fish and meat utilized a simple linear relationship which did not satisfy the underlying properties of the demand function and in most cases failed to provide "proper" estimates of their own-price and income elasticities. In many instances these findings may have provided inaccurate forecasts on the demand for the goods and misleading inferences were drawn from them, sometimes baffling development economists and implementing agencies.

Results and Policy Implications

Estimates of the structural parameters of the dynamic AIDS model are given in Table 1. The overall results of the maximum likelihood estimates of the dynamic AIDS model are quite good where 19 of 30 coefficients are significantly different from zero and the minimum budget shares, the constant, are between zero and one for each meat type. The income coefficients are all negative and highly significant for each meat type except mutton, indicating that fish and other meats, except mutton are essential. From the table, it is also interesting to note that the habit persistence variable was positive and significant for fish, chicken, and pork, but negative and insignificant for beef and mutton. This indicates the pervasiveness of habit formation in fish, chicken, and pork but the amount of beef and mutton purchased during the last period tends to lower current budget share allocations. Consumers tend to purchase and consume fish, chicken, and pork almost daily. Beef and mutton are only consumed occasionally since they are relatively more expensive. This finding is consistent with the trend observed in the per capita consumption and budget share where fish, chicken, and pork tended to dominate over beef and mutton from 1960 to 1990.

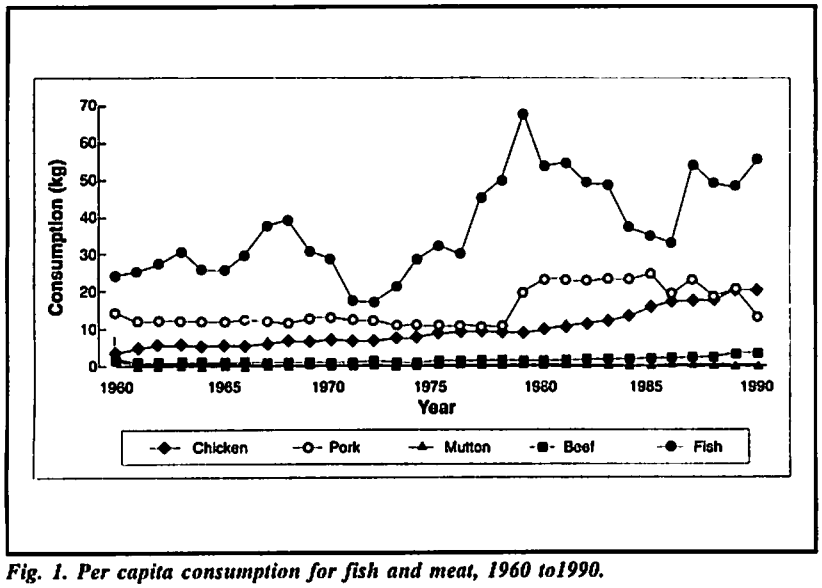

Fig. 1. Per capita consumption for fish and meat, 1960 to1990.

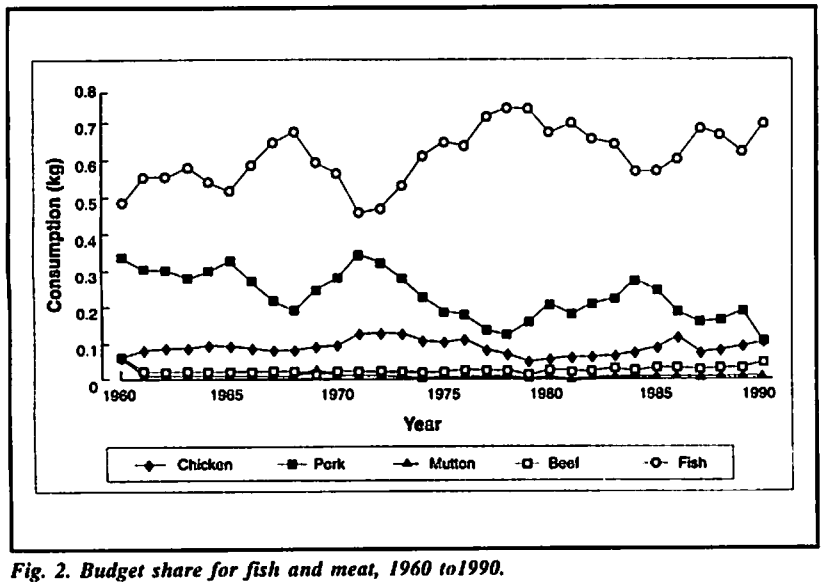

Fig. 2. Budget share for fish and meat, 1960 to1990.

Marshallian demand elasticities were computed using the structural parameter estimates presented in Table 1. The calculated demand elasticities for fish and other meat are shown in Table 2. All own-price elasticities are negative, consistent with apriori expectation, ranging from -0.78 to -1.01. The estimated own-price elasticities indicate that fish, pork, and beef are price inelastic. This means that a 1% change in the price of fish, pork, and beef will cause a less than 1% change in the quantity demanded for those meats. However, demand for chicken is price elastic with a value of own-price elasticity equals -1.01.

The income (expenditure) elasticities for fish and the meat groups are all positive but less than one. This indicates that fish and other meats are necessities. Although expenditure elasticities are not as large as has been shown in other studies, their values, however, are close to one. This indicates that future consumption of fish and other meats will increase if consumer income increases in the future. However, the demand for fish is still

expected to be greater than other meats.

It can also be seen from Table 2 that not all Marshallian cross-price elasticities are positive. This implies that some meats complement one another. Fish can be a substitute ($\eta_{ij}>0$) for chicken and pork but it complements beef. The other meat types, i.e., chicken, pork, and beef tend to complement each other ($\eta_{ij}<0$). This indicates that substitution between meat groups is rather limited.

Table 1. Maximum likelihood estimates of dynamic AIDS restricted for homogeneity and symmetry.

Variable	Fish	Chicken	Pork	Beef	Mutton
Price of fish	0.0047				
	(0.25)				
Price of chicken	-0.0004	-0.0032			
	(-0.09)	(-0.69)			
Price of pork	-0.0173	-0.0158	0.0096		
	(1.71)	(-3.29)*	(2.57)*		
Price of beef	-0.0061	-0.0060	-0.0100	0.0096	
	(-2.75)*	(-2.37)*	(-3.22)*	(2.57)*	
Price of mutton	0.0191	0.0254	0.0034	0.0126	-0.0605
	(0.93)	(3.89)*	(0.22)	(2.31)*	
Income	-0.0174	-0.0165	-0.0323	-0.0062	-0.0724
	(-13.95)	(-18.79)*	(-12.03)*	(-9.90)*	
Habit formation	0.0016	0.0009	0.0011	-0.0001	-0.0035
	(7.16)*	(4.13)*	(3.34)*	(-0.14)	
Constant	0.5703	0.1234	0.2456	0.0408	0.0199
	(18.09)*	(21.32)*	(14.80)*	(8.96)*	
D.W.	1.47	1.71	1.07	1.45	
R^2	0.87	0.93	0.86		
Log-likelihood value = 510.308					

Notes:t = values in parenthesis
* - significant at 5%

Table 2. Uncompensated price and expenditure elasticities*.

	Elasticities				Expenditure
	Fish	Chicken	Pork	Beef	elasticity
Fish	-0.92	0.014	0.001	-0.01	0.97
Chicken	0.06	-1.01	-0.09	-0.05	0.88
Pork	0.01	-0.05	-0.79	-0.03	0.86
Beef	-0.06	-0.1	-0.19	-0.78	0.86

* Elasticity estimates are calculated at sample means.

The above results suggest several points of interest to policy makers, planners, and meat traders in Malaysia: consumers are consistently demanding more fish as shown by the significant habit formation behavior in their demand; the expenditure elasticities for fish and other meat products were all positive but very close to one another indicating that they are necessities; and further increase in fish and meat consumption should be expected in the future, provided that consumers' incomes increase. The rather low own-price and somewhat high expenditure elasticities for fish and meat products revealed that they have acquired a dominant position in the Malaysian diet. Fish remains the most popular meat item and is the only item that can substitute for the other meat types. It is, therefore imperative that a continuous and stable supply of fish, at a reasonable price, be made available to the population. Any shortfall in the supply of fish will have a negative impact on the consumer's diet, nutrition, and health.

Several strategies could be adopted by policy makers to ensure a sustainable supply of fish although they may not be the most appropriate for Malaysia. In order to ensure a sustainable supply of fish, this renewable resource must be managed efficiently. Increasing the importation of fish from the neighboring countries would probably be the easiest option but this would put unnecessary pressure on the country's already strained balance of payment and would not be politically and economically viable. Another alternative would be to increase domestic fish production but this could aggravate our already overexploited fishery resources further. Increasing fish prices and the use of more efficient fishing technology would not redress the problem either but would put unnecessary additional pressure on fish resources. Various management regimes have been discussed in great detail in fishery economics literature. Some methods, for example, fishing reduction measures, are currently being implemented by fishery administrators with encouraging results in some areas where fish production has improved. In the long run, these fishery resources conservation measures will help mitigate the growing demand for fish in this country.

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