

**World Rubber Market Structure
and Stabilisation**
An Econometric Study

C. Suan Tan

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C. Suan Tan is an economist with the Economic Analysis and Projections Department of the World Bank.

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ABSTRACT

This study examines some problems in the market for natural rubber, one of the ten core commodities proposed for stabilisation under the UNCTAD Integrated Programme for Commodities, and the first for which an international agreement was reached.

The first part of this study is concerned with the specification, estimation and validation of an econometric model of the world natural and synthetic rubbers market. The disaggregated annual model for 1956-1978 consists of two submodels, one for each rubber, and reflects their different industrial organisations. Other salient features of the model are the long lagged structures and the interaction between the submodels through relative rubber prices in the demand equations. The model validation shows that the secular decline in natural rubber price up to 1973 was due primarily to the substitution of natural rubber by the cheaper synthetic rubbers.

The second part of this study concerns the application of the model to forecasting natural rubber prices and to analysing the implications of natural rubber market stabilisation along the lines of the International Natural Rubber Agreement. The impact of national government interventions in world commodity markets is also illustrated by an examination of the impact of changing Malaysian export taxes.

Ex post and ex ante simulations of buffer stock stabilisation showed the importance of the manner in which the buffer stock is operated. The results also show that stabilisation will have different effects for the producing and consuming countries, which raises the question of the funding of the buffer stocks.

ABSTRAIT

L'auteur de la présente étude examine certains des problèmes du marché du caoutchouc naturel, qui est l'un des dix principaux produits dont le Programme intégré pour les produits de base de la CNUCED vise à stabiliser le marché, et le premier qui ait fait l'objet d'un accord international.

La première partie de l'étude traite de la spécification, de l'estimation et du test de validité d'un modèle économétrique du marché mondial du caoutchouc naturel et synthétique. Le modèle annuel pour la période 1956-78 est décomposé en deux sous-modèles, un pour chaque type de caoutchouc; il reflète le fait que l'organisation industrielle est différente dans les deux cas. Les autres caractéristiques du modèle sont les longs décalages incorporés dans les structures et l'interaction entre les sous-modèles due à l'introduction des prix relatifs du caoutchouc dans les équations de la demande. Le test de validité du modèle montre que la baisse séculaire des cours du caoutchouc naturel jusqu'en 1973 a été imputable avant tout au remplacement de ce produit par les caoutchoucs synthétiques meilleur marché.

La deuxième partie de l'étude concerne l'utilisation du modèle pour les projections du prix du caoutchouc naturel et l'analyse des incidences de la stabilisation du marché dans le cadre de l'Accord international sur le caoutchouc naturel. Elle illustre également les effets des interventions des pouvoirs publics sur les marchés mondiaux des produits de base en montrant quels ont été les résultats de la modification des taxes à l'exportation en Malaisie.

Des simulations ex post et ex ante des effets stabilisateurs du stock régulateur montrent l'importance de la manière dont celui-ci est géré. Il ressort également des résultats que cette stabilisation aura des conséquences différentes pour les pays producteurs et les pays consommateurs, ce qui soulève la question du financement des stocks régulateurs.

EXTRACTO

En este estudio se examinan algunos problemas que existen en el mercado del caucho natural, uno de los diez productos básicos esenciales que se han propuesto para estabilización en virtud del Programa Integrado para los Productos Básicos de la UNCTAD y el primero sobre el cual se ha alcanzado un acuerdo internacional.

La primera parte de este estudio trata de la especificación, estimación y validación de un modelo econométrico del mercado mundial de caucho natural y caucho sintético. El modelo anual desagregado para el período 1956-1978 consiste en dos submodelos, uno para cada tipo de caucho, y refleja sus distintas organizaciones industriales. Otras características destacadas del modelo son las estructuras con prolongados desfases y la acción recíproca entre los submodelos a través de precios relativos del caucho en las ecuaciones de demanda. La validación del modelo demuestra que la baja de los precios del caucho natural hasta 1973 se debió principalmente a la sustitución del caucho natural por cauchos sintéticos de menor costo.

La segunda parte del estudio se refiere a la aplicación del modelo al pronóstico de los precios del caucho natural y al análisis de las repercusiones de la estabilización del mercado de ese producto conforme al Convenio Internacional del Caucho Natural. El efecto de la intervención de los gobiernos nacionales en los mercados mundiales de productos básicos queda ilustrado también por un examen de las consecuencias de una modificación de los impuestos de exportación de Malasia.

Las simulaciones ex post y ex ante de una estabilización de las existencias reguladoras demostraron la importancia del modo en que éstas funcionan. Los resultados señalan además que la estabilización tendrá efectos diferentes para los países productores y los consumidores, lo que plantea la cuestión del financiamiento de las existencias reguladoras.

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