

Essays on Roll-on/Roll-off Policy: The Impact of Nautical Highways in the Philippines

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In 2003, the Roll-on Roll-off (Ro-Ro) policy was implemented in the Philippines to improve the efficiency and cost-effectiveness of the transportation system. This policy changed the country's maritime sector through the integration of sea and road network, which seeks to improve the inter-island economic linkages, increase competition and drive down transportation costs. With the Ro-Ro ferry terminal system, vehicles containing their cargoes can directly roll-on the ship at point of embarkation, and roll-off the ship at point of destination. It eliminates the need for cargo-handling equipment and portside facilities thereby simplifying shipping procedure and lowering transportation costs by about 30 to 40 percent.

In the literature, however, little has been done to track the policy's impact on Philippine economy. Some existing papers remain descriptive and fail to present empirical evidence in associating economic changes to Ro-Ro policy. This dissertation aims to supplement the scarce literature and serve as a useful guide to policymakers as it evaluates the impact of the Ro-Ro policy on two valuable sectors namely, agriculture and education.

The first study evaluates the effect of the Ro-Ro policy on agricultural household income by utilizing a panel fixed-effect model that exploits the differences in geographical distances of agricultural households from the nearest Ro-Ro port. Due to the archipelagic structure of the Philippines, we distinguish between (1) agricultural households that are on the same island as the Ro-Ro port and (2) agricultural households that are *not* on the same island as the Ro-Ro port, assuming differential impact of the policy on these groups. We generally find positive impact of the Ro-Ro policy on agricultural household income; however, our results suggest that the households may be specializing in entrepreneurial activities based on their comparative advantage. We observe that agricultural households that are closer to the Ro-Ro port and located on the same island as the Ro-Ro port appear to have higher income from non-agricultural sources/activities, while agricultural households that are similarly closer to the ports but are *not* on the same island as the Ro-Ro port appear to have higher income from agricultural sources/activities. The results of this study confirm the importance of an efficient and affordable inter-island transportation system for agricultural households, as it provides them access to trade opportunities as well as the option for specialization. Furthermore, it highlights the importance of proximity of agricultural households to transportation infrastructure such as the Ro-Ro port.

Meanwhile, the second study investigates the effect of the Ro-Ro policy on children's education, by comparing the school attendance of ages 5 to 21 in municipalities near the Ro-Ro ports versus the school attendance of ages 5 to 21 in municipalities near the non-Ro-Ro ports, before and after the policy implementation. Our results indicate that the Ro-Ro policy led to an increase in school attendance of both males and females in all levels of education. We likewise observe a decrease in employment of ages 15 to 21, complementary to the increase in school attendance. We provide several hypotheses to explain these results and discover an increase in

household income in municipalities near the Ro-Ro ports. We confirm that both children's school attendance and household income were positively affected by the Ro-Ro port operation. Moreover, we find a strong degree of correlation between children's school attendance and household income. While the Ro-Ro policy was not intended to influence education, we provide empirical evidence showing the increase children's school attendance in municipalities near the Ro-Ro port. In this study, we reveal that household's tendency to invest in children's education when provided with income-improving opportunities.