

ABSTRACT

Almost all countries have undergone a phase when markets were dominated by large public sector enterprises. Government controls, however, resulted in inefficiencies and produced undesirable outcomes. By the' 1980s there was a move towards liberalisation when the core sectors around the world began to undergo deregulation. The objective was to encourage competition and allow private firms to enter these sectors which had been under government control as it was expected to result in efficiency, improved performance and competitive pricing.

However, in reality, many of the deregulating industries encountered numerous impediments due to existing Government regulations which prevented the incumbent firms from adjusting its resources in response to deregulation. Such regulatory constraints lead to inefficiencies in resource allocation resulting in higher costs for the industry due to inoptimal use of inputs which has led to contrary and unexpected results in many industries in the post-liberalisation period.

In this thesis, we study the airlines industry in India which has undergone a similar experience. The aviation sector had been under Government control since 1953, when Indian Airlines was the sole operator in the domestic market. By the mid-1980s, the industry was marked by dismal performance due to poor quality of service, union pressures, political and bureaucratic interferences and deteriorating financial conditions. Competition was looked upon as a measure to improve the scenario and private operators were allowed to enter the industry.

Despite a gradual move towards entry deregulation since 1989, the Government failed to create the necessary infrastructure and institutions for the entrants. Deregulation was not accompanied by re-allocation of resources, especially labour. Workers in Indian Airlines were unionised and were provided job security so that they could not be retrenched in response to entry. Further, the industry required that workers possess job-specific skills which may be acquired through experience or training. Since training cost was prohibitively high, the new firms faced an acute shortage of skilled labour and gained entry by offering high wages to lure workers' away from the incumbent firm. This led to a wage spiral whereby costs began to escalate and in an attempt to cover costs, airfares began to rise. This provides the background of the three core chapters of my

thesis.

In the first exercise we draw up a theoretical framework where the characteristics of job security, unionisation in the incumbent firm and wage contest by the entrants have been incorporated in a game theoretic framework. We find that in the presence of job security, duopoly outputs can behave in a peculiar way when some parameters change. In particular, output of the incumbent does not depend on its own wage cost but varies directly with wages offered by the entrant. Changes in parameters such as union size or bargaining power has asymmetric effects of outputs of the firms. Moreover, a powerful union in the incumbent firm is found to raise its own output but leads to greater redundancy in the industry, which is contrary to the results in standard bargaining models. Finally, we find that in the presence of job security and wage contest, duopoly social welfare may not always exceed the monopoly social welfare which emphasises the importance of labour market complexities, including bargaining effects and strategic interactions in the context of entry deregulation. These findings have important policy implications not only in the context of the aviation sector in India but also for those public sector enterprises which attempt to undergo liberalisation without relaxing pro-worker measures.

As an extension of the previous model, in the next chapter we have allowed for labour market reform and retrenchment of labour by the incumbent firm. The entrant also has the option to train new workers. The focus of this chapter is on the optimal entry strategy and we develop a simple three-stage full information game to analyse the response of the entrant. The entrant either makes appropriate wage offers to the union, which depends on the size of the union or invests on training new workers. When the entrant offers a low wage, the supply of workers may become constrained and he would operate at a restricted scale by hiring residual workers, after the incumbent fulfills its labour demand. On the other hand, when the entrant offers a high wage, the labour supply constraint is relaxed and both firms can choose workers optimally. When the entrant hires workers from outside the union, he incurs a fixed training cost and there arises a possibility of facing the threat of 'limit pricing'. When the cost on training exceeds a critical level, entry would be deterred and the entrant has to make wage offers to the union. As the labour pool becomes small, training emerges as the dominant optimal strategy, as long as the cost remains below the critical level. Comparisons of social welfare reveal that it is socially optimal to exercise the option of training new workers, especially when the union size is small and this is valid even

at higher levels of costs. The results also highlight the case for providing the entrant with training subsidy, which has important policy directives in the context of the aviation sector in India.

Finally, we empirically verify the presence of inefficiency in allocation of resources in the aviation industry in India by quantifying the extent of cost increase due to such inefficiencies. A generalised cost function has been used and the effects of regulatory constraints have been modelled through distortions in input prices, by analysing the data for Indian Airlines. We have estimated a trans log cost function in order to identify the distortion factors for each input for each year and the extent of increase in costs due to allocative inefficiencies that arise out of such distortion in input rise. Finally, we have measured the growth in total factor productivity for Indian Airlines.

Our findings provide an explanation for the hikes in airfares in the post-reform period. First, there is overemployment of labour with respect to capital and the magnitude has been increasing over time. Such allocative inefficiency has led to high costs and the divergence between actual cost and efficient cost has increased significantly after deregulation. Second, increase in costs may not necessarily result in increase in prices if they are absorbed through growth in factor productivity. However, our estimates of TFP growth indicate that the TFP growth in Indian Airlines has been negative till the mid-1980s and has been almost zero during the 1990s. Therefore, along with increases in prices of inputs, allocative inefficiencies in Indian Airlines have worsened after deregulation of entry, resulting in significant pressure on operating costs for the firm. In the absence of any growth in productivity, the increases in costs have translated into hikes in prices to cover the costs.

