

## THESIS SUMMARY

The broad objective of this study is to examine the role of FDI in industrial development in Kenya. It has been argued that investment in the form of FDI is likely to spur development in a host country by playing a supportive role or by acting as a complement to local investment and innovation. Under certain conditions, FDI could serve to improve host countries' industrial development effort and their competitiveness by bringing into them some desirable attributes such as best practices in production, new skills and trainings, leading-edge or new technology, new managerial and marketing know-how, facilitate supply and knowledge linkage formation. Such linkage formation facilitates spread of skills and information to the economy and might catalyse the existing entrepreneurial efforts through demonstration effects. Further, FDI might help strengthen local systems of innovation within developing countries when MNC subsidiaries encourage local R&D institutes to enhance commercialisation of their accumulated capability. This study therefore arises out of concerns to understand how FDI affects industrialisation process in Kenya with particular emphasis on MNCs' influence in promoting a dynamic manufacturing industry by stimulating learning, capability building and innovation. The specific objectives of this study were outlined as follows:

- (1) To investigate the extent to which the presence of MNCs stimulates spillovers to local manufacturing enterprises in Kenya.
- (2) To determine the conditions under which spillovers occur in Kenyan manufacturing enterprises.
- (3) To investigate how spillovers from MNCs impact on technological innovations at the enterprise level in the Kenyan manufacturing industry<sup>1</sup>.
- (4) To draw some lessons and policy implications for a spillover driven industrial development in Kenya.

The thesis employed an empirical approach designed in three stages; aggregate and firm level analysis using official data, firm level analysis using survey and finally case studies aimed at providing deeper insights into the underlying issues observed in the survey findings. Three literature strands were adopted: spillover, cluster and network dynamics,

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<sup>1</sup> This is based on two selected manufacturing industries: Food processing and beverages and machine engineering industry.

and technological innovations. The comparative analysis done using official data showed that foreign firms dominated in virtually all economic activities. Foreign firms were also noted to be concentrated in only a few sectors. Interestingly, the analysis showed that locally owned firms had better performance than foreign firms on the basis of growth rates recorded. While foreign firms recorded declining growth rates with virtually all their variables, domestic firms had positive growth rates in several variables implying they were gradually catching up with foreign firms. In order to have a wider set of results for comparison, we decided to undertake productivity analysis. The findings obtained in the case of foreign presence at the sector level were quite interesting. Two sets of results emerged depending on the methodological approach adopted. Results estimated following 'early contributors' supported spillover occurrence while analysis based on 'new developments' failed to support spillover occurrence. This showed that the existing divergence in the spillover literature could be viewed in the Kenyan context. We decided not to stop at that point but rather to probe further. It could be the case that sectors with negative effect or low effect due to foreign presence offsetted those with strong positive impact making the resultant effect neutral sometimes negative hence insignificant results. This was possible in Kenya's manufacturing since results based on comparative behaviour showed that foreign presence was not uniformly distributed. These results, therefore, begged for an alternative framework beyond productivity techniques.

Analysis of survey data collected from 180 firms in food and beverages processing, and machine engineering industries showed that foreign presence stimulated spillover occurrence to the locally owned firms. Spillovers occurred most in products and in process followed by marketing strategy. Interestingly, management and organization, and repairs and maintenance had the lowest levels of spillover occurrence. Examination of spillover mechanisms showed that spillovers were mainly generated by competition followed by demonstration effects. This was followed by labour mobility and finally linkages. Determinants of spillover occurrence were examined using binary and ordered logit estimation techniques. Results from our analysis showed that foreign presence had a positive correlation with spillover index – implying that an increase in foreign presence increased spillover occurrence in firms. These findings supported our hypothesis that foreign presence generated positive technological spillovers in Kenya's manufacturing industry.

Our analysis showed that virtually all of the spillover determinants had the expected signs, were statistically significant and made intuitive sense. Firm characteristics such as firm size, firm age and age of the machinery had significant and positive influence on spillover occurrence. These findings suggested that spillovers were more likely to occur in large firms than in small firms; in old firms than in young firms and in firms with old production machinery than with young machinery. As noted, large firms are endowed with the necessary resources to spread over technological changes incurred while age reflected experience accumulated over time. Age-squared produced a negative correlation implying a non-linear "inverted-U" spillover occurrence pattern supporting more spillovers with the middle aged firms than with the young and old firms. Kenyan Asian firms enjoyed more spillovers compared to non-Asian firms in Kenyan manufacturing. This was not surprisingly since Asian firms in Kenya were noted to be more advanced in terms of resources and technological sophistication than those owned by indigenous Africans placing them in a better position to absorb and assimilate spillovers. The variables for infrastructure, institutional support and interactions produced the expected results. For instance result of interactions supported our hypotheses that interactions with business, private and public institutions stimulated spillover occurrence. Similarly, absorptive capacity was important for spillover occurrence. The results supported our hypothesis that skilled personnel were extremely important for spillover absorption and assimilation. Similarly, low technological gap influenced spillover occurrence in Kenyan manufacturing supporting the importance of a certain minimum threshold for spillover occurrence.

The results obtained with firm strategy were as expected. Firms with strong training strategies were more likely to have high spillover occurrence than firms without such strategies. Similarly, firms with strong strategies to constantly modify and upgrade their processing technology obtained high spillovers than firms without such strategies. These findings were as expected since firms' training, constant modification and upgrading improves their general absorptive capacity. With regard to trade orientation, our findings were surprising. While the results estimated for imports were as expected, those estimated for exports were contrary to expectation. The results implied that exports influenced spillover occurrence negatively, which seemed to suggest that none exporting firms enjoyed more spillovers than exporting firms. Finally, the results of labour market conditions were as expected and in line with the spillover literature that good labour

market conditions such as payment of efficiency wages, fringe benefits and prudent human resource development practices translates into reduced mobility of workers and thus reduced spillover occurrence. In line with this argument, wages which was our proxy for labour market conditions had a negative influence on spillover occurrence.

Case studies confirmed spillover occurrence further supporting our claim that FDI in Kenya's manufacturing played a crucial role in industrial development. On the basis of analysis done, we conclude that by conceptualising spillovers in terms of learning and capability building, foreign presence stimulates spillover occurrence in the two industries studied. However these results cannot be generalised for the entire manufacturing industry since foreign presence is not equally distributed in all the sectors. Furthermore, technological changes as a result of spillovers are different in different sectors. Each manufacturing sector requires own and separate treatment. Nonetheless, the implication of these findings is that through spillover occurrence, FDI plays an important role in stimulating learning, capability building and promoted innovation both directly and indirectly in Kenya's manufacturing industry. In conclusion, the analysis and findings of this study supports our claim that FDI plays an important role in Kenya's industrialisation process. The analytical framework developed challenges the existing approaches in spillover analysis. The findings of this study generate several lessons with important ramifications for government policy. Our analysis showed that for FDI to stimulate industrial capability development through spillover occurrence, several factors must be considered. Hence the study advocates for a comprehensive set of policies.

The emerging policy implications can therefore be outlined as follows: First, the government must exercise consistency in industrial policies. Clear long term policies allow firms to formulate long term planning horizons to achieve long term goals. Second, the government should come up with more definitive policies geared towards promotion of linkages. We recommend that a national linkage promotion programme should be created to deal with all issues related with linkages both nationally and internationally. Third, the government needs to formulate policies to enhance its human capital accumulation. For firms to increase their absorptive capacity and spillover assimilation a strong culture of technology development is required. Consequently, policies should be focused at supporting firm level learning, capability building and innovation. R&D at firm and industry level should be encouraged and facilitated. Fourth, due to weak

facilitation and coordination role played by institutions, the government needs to come up with policies which ensure sound running and performance of these institutions. For instance, institutions dealing with industrial R&D should be empowered in terms of broadening their capacities i.e. human capital and finance to support R&D and related activities. Fifth, the government should be more prudent by removing operating bottlenecks in these institutions through continuous coordination and efficiency stimulation. Sixth, poor infrastructure makes operation and transaction costs extremely high thus lowering willingness to invest, interactions among firms and thus hinders spillover occurrence. The government should therefore provide basic infrastructure in earnest. The success story of newly industrialised countries (NICs) in East Asia shows us that a government that does not offer continuous support and effective industrial facilitation often fails its own entrepreneurs.

Seventh, formal and informal interactions with institutions and business associations create an atmosphere where local entrepreneurs share manufacturing experience, market information, skills and technological knowledge with foreign firms. The government should therefore encourage more of such interactions. Eighth, although competition played an important role in the spillover process, it is however noted that high competition from MNCs could crowd out domestic investment. We recommend establishment of a new semi-autonomous, regulatory (bureaucratic) institution with a capacity to determine the prevailing competition levels and to implement corrective measures on time. Ninth, our study showed that imports were important in the spillover process. The Kenya government should strategically remove import barriers of capital goods, technology, machinery and equipment that could serve as sources of learning and capability development through imitation, replication and reverse engineering. Participation in exports should be encouraged as that would force domestic firms to learn and increase their technological effort in order to compete effectively in the international global market. Finally, good labour market conditions are important for industrial growth and development. Hence the government should promote them and in addition promote a culture of labour mobility.

The study has several suggestions for further future research work; *First*, since the survey focused on only two sectors; there is a need to broaden the study to include other sectors with relatively high foreign presence. In addition, future studies should include more case

studies as they were observed to be more revealing. Such an approach is however expensive, time consuming, requiring expansive manpower and much effort. In this study, time factor and resources constraint limited our scope. *Second*, it would also be interesting to conduct similar studies in other sub Saharan countries applying the analytical framework developed. Similarly, other developing and technically backward countries from the rest of the world can also be studied for international comparisons. *Third*, given the tremendous shift observed in FDI, for example the shift to service industry, the application of the framework can equally be extended to the service industry for spillover analysis. Service sectors with high foreign presence include tourism and hotel sector, finance and insurance sector as well as building and construction industry. Additionally, the approach can be extended to agriculture, especially the flourishing and successful case of horticulture sector in Kenya. *Fourth*, since this study focused on production and complementary capabilities the study can be broadened to include other technological capabilities such as investment and linkage capabilities. *Finally*, since this study did not focus spillover analysis from the perspective of FDI origin, there is a need to conduct a study which enables spillover comparisons by MNC's origin. This recommendation follows an existing notion that occurrence of spillovers from MNCs of different countries differs. That is, MNCs from Europe would be different from American MNCs as would do MNCs from Asia. Even then, MNCs from the same continent, for instance MNCs from Germany and Britain, could also produce different spillover experiences. Comparisons between MNCs from developed countries and those from advanced developing countries could also make an interesting study for comparative purposes.