

BACKGROUND NOTE – SESSION 3

Innovation policies for inclusive development

There is a growing awareness that the benefits of growth do not automatically trickle down and the question of how policies – including innovation policies – can support inclusive development has become more pressing. Inclusive innovations improve the welfare of lower-income and excluded groups and directly contribute to inclusive growth.

Innovation – which fosters competitiveness, productivity, and job creation – is central to boosting economic growth and addressing social challenges. But more needs to be done to better understand how innovation can contribute to inclusive development. So far, innovation policies have been analysed essentially with regards to their impact on the growth of aggregate income. However, their impacts are unlikely to be “neutral” as they may affect individuals and groups in society to different extents (“social inclusiveness”). All businesses are not on an equal footing regarding innovation capacities and access to the corresponding benefits (“industrial inclusiveness”). Moreover, policies aimed at promoting innovation affect the geographic dimensions of industrial and social inequalities and underpin inequalities between urban and rural (“territorial inclusiveness”). As a result, it is important to consider the social, industrial and territorial implications of innovation policies as well. Inclusiveness also relates to ways for expanding the circle of individuals and firms that successfully engage in innovation.

Innovation matters critically to make growth inclusive

Innovation dynamics are by nature “disruptive” and critically affect inequalities. Innovation-driven growth does not result in creating more of the same: It is a process of “creative destruction”, particularly in periods of substantial technological change. The changes to economic activity innovation produces as part of the growth process create winners and losers. In other words, innovation is not only impacting growth but also how “inclusive” such growth will be. Developed and developing economies alike have to take these potential impacts into account when developing their innovation policies. Inclusive innovations, innovations that improve the welfare of lower-income and excluded groups, directly contribute to inclusive growth.

The beginning of the 21st century marks a period of substantial change for the global economy notably with the following trends with impacts on inequality:

- Information and communication technologies (ICTs) are pervasive and have generated multiple innovations in a variety of fields. They have introduced substantial transformations to economic activity and beyond. While the debate on the role of technological change on wage inequalities is far from settled, there is agreement that ICTs have affected the types of labour demanded in different ways from the usual skills paradigm.
- There has been a shift in global dynamics with a much more important role of China, and, to a lesser extent, of India and Southeast Asia. By contrast, advanced economies have known but sluggish growth in the aftermath of the global economic and financial crises. The growing market size of China and, to a lesser extent, India and Southeast Asia may generate dynamics whereby business focus more on serving the needs of growing middle- and, in some cases, lower-income classes in those economies. By serving those markets the direction of technological progress might also serve lower income groups in OECD countries more substantially.

- Innovation is rising to importance for countries' international competitiveness as opposed to physical production capacities of goods or the routine provision of services. That is, the ability to produce frontier innovations is increasingly important. The rewards for investors and entrepreneurs are higher in "knowledge economies" and affect the returns to capital relative to labour with implications on inequality.

The relationship between income inequality and innovation is complex because the impacts will be affected by a variety of factors and, in consequence, a variety of policies (in addition to innovation policies). Quantitative evidence from new OECD work suggests that there is no simple linear relation between income inequality and innovation efforts, as measured by R&D spending. This work finds that income inequality in 2010 was higher in regions that had either relatively high or relatively low levels of R&D spending during the mid-to-late 1990s. This points to innovation initially being beneficial for income equality (by allow for catch up), while at high levels the effects of rents accruing to a small group may become dominant. As an example, the appearance of a fairly significant number of "internet millionaires" in some highly innovative regions likely contributed to increased inequality in these places.

Gaps in innovation performance across actors and diffusion affect inclusive growth

Industrial inclusiveness is a critical characteristic of countries' innovation system when it comes to assessing innovation's impacts on inclusive growth. "Industrial inclusiveness" refers to the extent to which an economy's firms, sectors, universities and public research institutes or regions overcome differences in their innovation capacities. Inequalities result in "islands of excellence" which indicate differential opportunities for groups in society to be part of innovation processes, whether as employees or entrepreneurs. Alternatively, a multiplicity of innovators might contribute to an economy's innovation activities.

"Islands of excellence" exist in both developed and developing countries. In emerging economies the gap between "islands of excellence" and the remainder of the economy is generally much stronger. "Islands of excellence" compete in the world economy and often reflect countries' targeted efforts at positioning themselves in global value chains. Some developments suggest concentration will remain important: The fact that costs for developing innovations have risen in some sectors such as pharmaceuticals imposes larger barriers to entry. This reduces opportunities for widening the group of innovators as high costs lead to concentration of innovation research efforts.

Excellence in innovation performance is also often concentrated, thus widening the gap with weaker performers. OECD work suggests that R&D spending helps already advanced regions grow, whereas regions with catching-up potential seem to benefit more from other types of investment. R&D activity is highest in regions with income above their country's average, and it is only within this group that R&D investment and patenting activity seems to raise growth. The explanation for this may be that R&D-driven innovation is mainly relevant for parts of countries that are already at the technological frontier, whereas for the other parts "simpler" types of innovation, such as process innovations - that can often be achieved by copying functioning models from elsewhere - are more relevant.

ICTs might help reverse the trend towards a concentration of innovation actors, but there are caveats to the argument. ICTs provide opportunities for a new type of entrepreneurship that is much less capital intensive and not as risky. Such dynamics, by reducing barriers to entry, broaden the group of entrepreneurs who can invest in innovations and, thereby, reduce the potential inequality-raising dynamics of the knowledge economy. Also, growing demands for customized products requiring user interactions and the need for incremental non-technological innovations might further benefit the "democratization of innovation" i.e. the expansion of the circle of individuals and firms that successfully engage in innovation. However, networks dimensions play a critical role in many ICT-based sectors providing a distinct advantage to incumbents who control those networks. In consequence, there is a risk of concentration once mature business models are developed.

The extent to which innovations benefit “outsiders” will shape opportunities for different groups in society to benefit in their economic activities from “islands of excellence”. The question of trickle-down dynamics depends on *a)* the “relevance” of “islands of excellence” for the remainder of the economy’s activities, *b)* the capacity of the remainder of the economy to absorb innovations and *c)* the “connecting” linkages between “islands of excellence” and the remainder. The role of the Internet can be a critical factor serving wider spillovers to the economy. Evidence from new OECD work shows that the Internet effectively served as a means for improved knowledge diffusion supporting innovation activities of firms in remote locations, of smaller size and those with no export activities or foreign connections. However, only the more productive firms benefited, reflecting a critical need for outsiders’ absorptive capacities. Other factors that will affect trickle-down dynamics include also linkages between different sectors of activities, the types of connections between start-ups and incumbent businesses and the role of industry associations.

Inclusive innovations and their potential

Inclusive innovations improve the welfare of lower-income and excluded groups and directly contribute to inclusive growth. Expectations that inclusive innovation initiatives can make a difference are based on two of their characteristics: First, attention is often paid to developing sustainable “business models” that would cover the costs of providing innovations to the poor. If successful, this would allow reaching a much larger number of excluded groups. Second, supporting innovation activities of lower-income and excluded groups, so-called grassroots innovations, can provide a way to overcome poverty traps. This is critical for many emerging and developing countries where the size of the informal economy is substantial.

Kenya’s M-Pesa – launched in 2007 by Vodafone and Safaricom – is a good example of innovation contributing to inclusiveness. M-Pesa is a money transfer service that uses text-messaging on mobile phones and a network of retail agents as cash-in/cash-out points. Today, coverage extends to about 15 million users, which corresponds to 70% of Kenya’s adult population. Given that in 2010 only 19% of the population had a bank account, M-Pesa has contributed significantly to Kenyan’s access to financial services. Another example is the use of “workflow innovation” in India’s Aravind Eyecare Hospital, which has saved over 2 million patients from blindness by providing cataract surgery to consumers at a price based on their capacity to pay. Aravind Eyecare performs 200 000-300 000 operations a year for between USD 30-300, compared to an average cost in developed economies of around USD 3 000, with comparable quality standards.

Inclusive innovations differ from standard innovations in the following ways:

- High sensitivity to price, which is an important characteristic of lower-income markets.
- They serve a different market, where incomes are lower and certain basic products and services are much more important. Lack of access to public services – notably health, infrastructure and education – is among the most critical challenges.
- Access conditions for delivering new products and services to poor and excluded groups are more difficult due to infrastructure shortcomings – such as a lack of high-quality roads to transport products to remote villages and limited access to electricity which reduces opportunities for products requiring electricity to be deployed. Some innovations, mobile technologies in particular, have reduced barriers for the delivery of certain types of services.
- Correctly assessing actual demand is a challenge for frugal innovators as there is a larger gap between them and their prospective clients about which little information is available. Insufficient awareness of demand creates a higher risk of product failure. A related issue is that potential consumers might not be fully aware about the uses they can make of a product. This often requires additional outreach to encourage uptake.
- Grassroots innovators have in-depth knowledge of their own needs but might face multiple barriers to applying their knowledge adequately. This is because they have limited access to resources and/or opportunities to develop products. Lack of access to technical and scientific knowledge can further inhibit product development. Connecting grassroots innovators to universities and public research institutes can help support product development.

Scale has been a challenge for many inclusive innovations and those that reached scale shared the following characteristics:

- They succeeded in capturing demand of the poor (including by their integration as part of the innovation process).
- Private businesses played an important role at all stages of project development.
- Innovative business models and approaches were critical for scaling inclusive innovations. Otherwise creating affordable products of quality will not be possible.
- Regulatory conditions facilitated the success of these innovations, particularly those that are public goods.

They often took advantage of existing infrastructures and institutions (including NGOs, informal shops, etc.).

Questions

1. How can innovation policies support developing countries' quest for competitiveness without compromising industrial, social and territorial inclusiveness?
2. How can inclusive innovation initiatives be expanded to improve welfare and facilitate the democratisation of innovation? What policies can help the knowledge and benefits generated by "islands of excellence" trickle down to the rest of society?
3. What are some concrete policy solutions to support countries in reconciling their innovation and inclusive development agendas? What are the major trade-offs that may be encountered and what tools can help policymakers find the best solution for their particular context? What are some examples of successful institutional arrangements that can make this "win-win" approach happen?

Further information

The OECD project on Innovation for Inclusive Growth is aimed at providing evidence on those questions. More information can be found on the project website: <http://oe.cd/inclusive>.