## *Technology changes led to job losses in the past too, as McKinsey points out, important to retool labour force*

Robots threaten over 100 million jobs in India, 800 million worldwide, screams the headline of one financial daily while describing the findings of the latest report on automation and robots by the McKinsey Global Institute (MGI). Not surprising, you'd think, especially since many others, including MGI itself, have warned about the alarming potential loss of jobs to robots and other forms of artificial intelligence (AI)—typically 30-40% of jobs in many sectors—over the past few years. Yet, as Thursday's Financial Express reported, on the same MGI study, "benefits may outweigh costs"; that is, while a lot of jobs would be lost, a lot more would get created (see graphic). What gives? And does this mean the world and India can just sit back and relax? Not quite, but while the AI/robot threat is a big one, it is important not to panic and to put things in perspective. While MGI puts the global job losses at 400 million between now and 2030 at the mid-point, it does say this can rise to 800 million in a rapid automation scenario. But, while saying this, it looks at previous episodes of automation going back to the first industrial revolution in the late 1700s, and says "in many respects, the impact of automation on employment today is not likely to be different than in the past", and goes on to say that the potential to displace could be higher "if the adoption of automation is rapid across multiple sectors of the economy". In the case of computers, MGI estimates this destroyed 3.5 million jobs in the US, but also created 19.3 million in 1970-2015.

Which is why, while talking of automation destroying 400-800 million jobs globally, MGI also talks of new opportunities for 390-590 million jobs in the normal course—automation, it estimates, will raise productivity by 0.8-1.4 ppt per annum, so there will be a surge in demand due to this—and another 165-300 million jobs if fresh investment is made in areas like infrastructure. In the case of India, similarly, while MGI's mid-point job-destruction estimate is a loss of 57 million due to robots and AI, it estimates 114 million new jobs for India in just the baseline scenario due to greater demand arising from higher incomes and productivity hikes; another 98 million jobs can be created, according to MGI, if there is more investment in areas like infrastructure—according to this estimate, India is going to create more than enough jobs; quite the opposite of the doomsday scenario most paint.

There are, of course, some important caveats that we can ignore only at our own peril. Naturally, robots and AI will destroy jobs, just as motor cars and computers destroyed jobs in the past—between 1910 and 1950, MGI estimates cars destroyed 0.6 million jobs in the US but created 7.5 million new ones—but this is not that important if those who lose jobs are able to retool themselves and find new jobs. Also, it is obvious, jobs will be lost the fastest in areas

where lots of value is to be created—that is, it makes sense to get AI to replace a radiologist than, say, a tailor. And to be able to get new jobs in an AI-driven world, the labour force has to be a lot better skilled/educated.
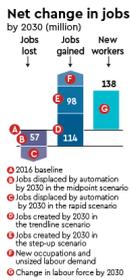
This is where India's political class continues to goof up badly. AI will be slower to replace jobs in labour-intensive sectors like clothing, but our labour laws have ensured the big boom in global exports of these goods has been captured by the likes of Bangladesh. FE has just reported the central government has all but given up on its labour reforms plan (goo.gl/VT8SCK) and, in the face of opposition, Maharashtra has also reportedly done the same. In other words, while AI/robots will eat into certain kinds of jobs anyway, India's ability to expand in less vulnerable jobs is held hostage to its poor labour laws, among other policy impediments.

There is then the issue of educating the work force to deal with the changes. According to MGI, around 100 million more jobs will be created in India by 2030 that will require at least secondary-level education—there will be a 3-fold hike in the numbers requiring secondary-level education, doubling of those requiring associate degrees and a 50% hike in college-level degrees. Given the mess made of India's education system and, within this, the havoc wrought by student- and teacher-level reservations, such a large step-up in education is a tall ask—we may still get the numbers, but if these graduates are as unemployable as they are today, that won't help; indeed, a less talented work force will only speed up the process of automation/AI. Given how electoral politics have forced successive governments, over decades, to shelve serious education and labour reforms, it is not clear how India will meet this next big challenge—even the severe jobs crisis doesn't seem to have persuaded the government of the urgency.