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**Trends Beyond the Horizon,  
Trends Beyond Demographics**  
*The Changing Nature of Work, Workers,  
and the Workplace*

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*Background to a presentation by  
David Baxter, Urban Futures  
at the  
Trends Beyond the Horizon Conference*

*Munich, Germany October 28, 2009*

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## 1. Introduction

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Over the coming decades, demographic change will be a major impetus to change in labour markets. Of specific interest will be the tightening of labour supply in many mature market economies as a result of aging populations, and specifically the slow growth (and in some cases decline) of the working-aged population (15 to 64 years of age). While the roots of such changes will be demographic, as will some of the adjustments to them, many of the responses to these changes will lie beyond demographics.

However, before considering what lies beyond the demographics, it is necessary to briefly consider the demographics themselves. This will establish the timing and magnitude of the projected labour supply tightening, and provide a basis for the discussion of potential demographic responses. Given this context, it will then be appropriate to consider the range of non-demographic responses.

The concern with tightening labour markets are that they may become a constraint to the production of goods and services due either to an absolute shortage of labour (rarely the case), an absolute shortage of labour with specific skills (much more common), or because local workers do not respond to employment vacancies at the prevailing wage rates (particularly in the low-skills / “dirty-work” sectors). For example, Professor Mikhail Denissenko, of Moscow State University, recently noted the situation in Moscow:

*“A lot of immigrants from Central Asia have moved [here] to work in the under-qualified sectors. At the same time, Russian people who have lost their jobs do not want to work in those sectors. ... There are some suggestions to stop this immigration. Frankly, it is impossible. In Moscow, transportation would stop. An essential part of the economy will fall apart without immigrants.”*

While often referred to as labour shortages, in the strictest economic sense the tightening of labour supply is not necessarily so, as market adjustments should work to eliminate any true labour shortage: only if adjustments are not allowed would there be a shortage in the true economic sense. Having noted this, there are often barriers to such market adjustments, from the restriction of labour mobility to restrictions on capital substitution. In this brief review, both the direction of labour market adjustment and the barriers to these adjustments are addressed. For purposes of illustration, a national and governmental context is used; however, the general nature of the discussion is equally applicable at the firm level.

## 2. The Demographic Context

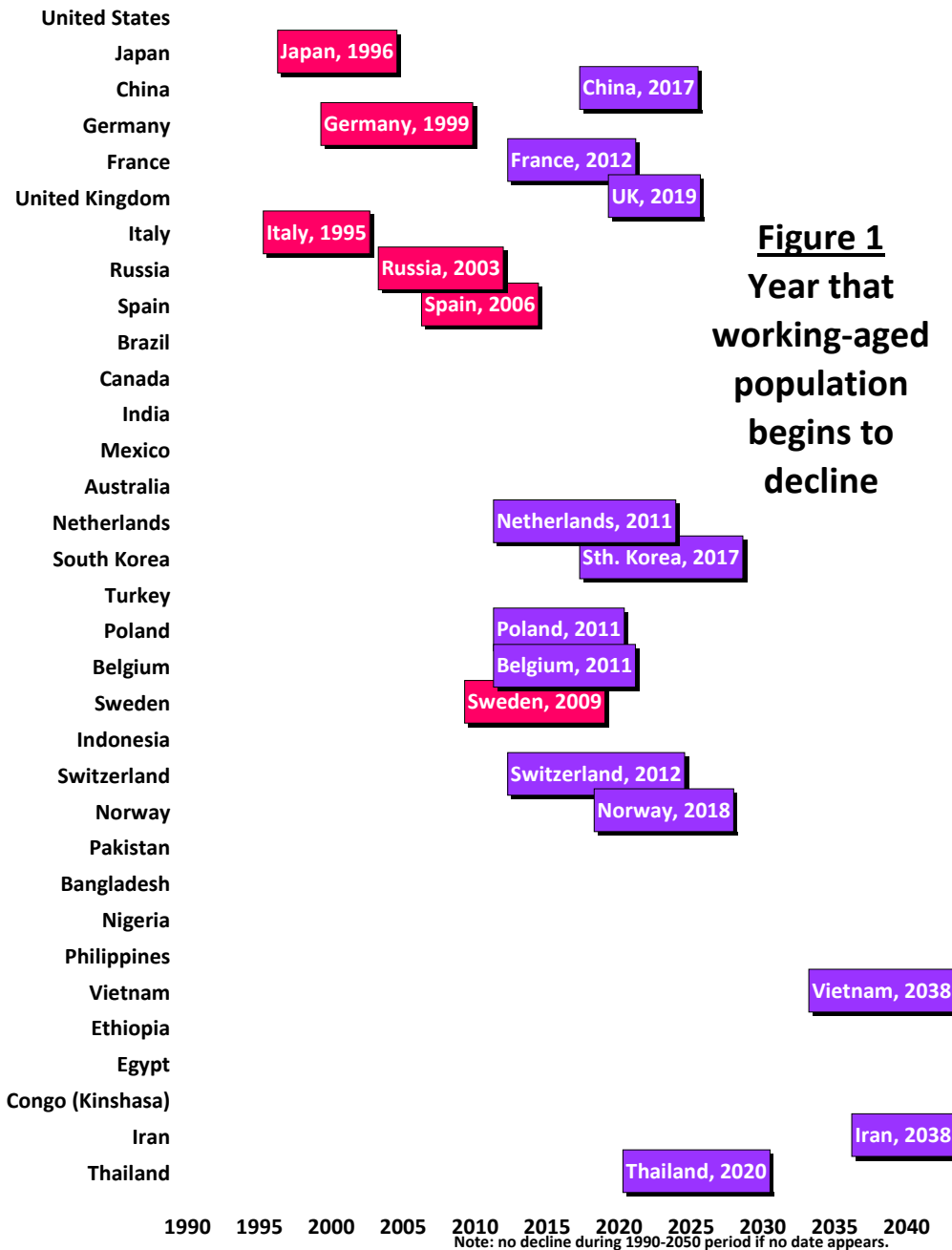
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Potential labour supply constraints can be shown in a quick tour on the projected demography of the world’s top 33 countries (the 22 largest economies and 11 most populous countries). The first dimension is a mapping of the year, over the next 50, when working-aged populations (aged 15 to 64) are projected to contract. As Figure 1<sup>1</sup> shows, in some countries this contraction has already begun, including Germany (1999), Italy (1995), Japan (1996), Russia (2003), Spain (2006), and Sweden (2009). These countries’ growing reliance on external markets for economic growth has been observed, something that is understandable given the shrinking of the prime consumer-age groups in the domestic market.

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<sup>1</sup> Based on historical data and population projections from the United Nations Population Division World Population Prospects, The 2008 Revision Population Data Base, and the United States of America Census Bureau International Data Base.

Unsurprisingly, the working-aged populations of France (2012), United Kingdom (2019), Netherlands (2011), Poland (2011), Belgium (2011), Switzerland (2012), and Norway (2018) are all projected to decline



**Figure 1**  
**Year that**  
**working-aged**  
**population**  
**begins to**  
**decline**

in the near- and middle-term. Some may be surprised however to see China (2017) not only on the list, but with a projected decline in the working-aged population starting within a decade. South Korea (2017) and Thailand (2020) also face contracting working-aged populations in the middle-term. Over the longer-term, projections also show a decline in the working-aged populations in both Vietnam and Iran.

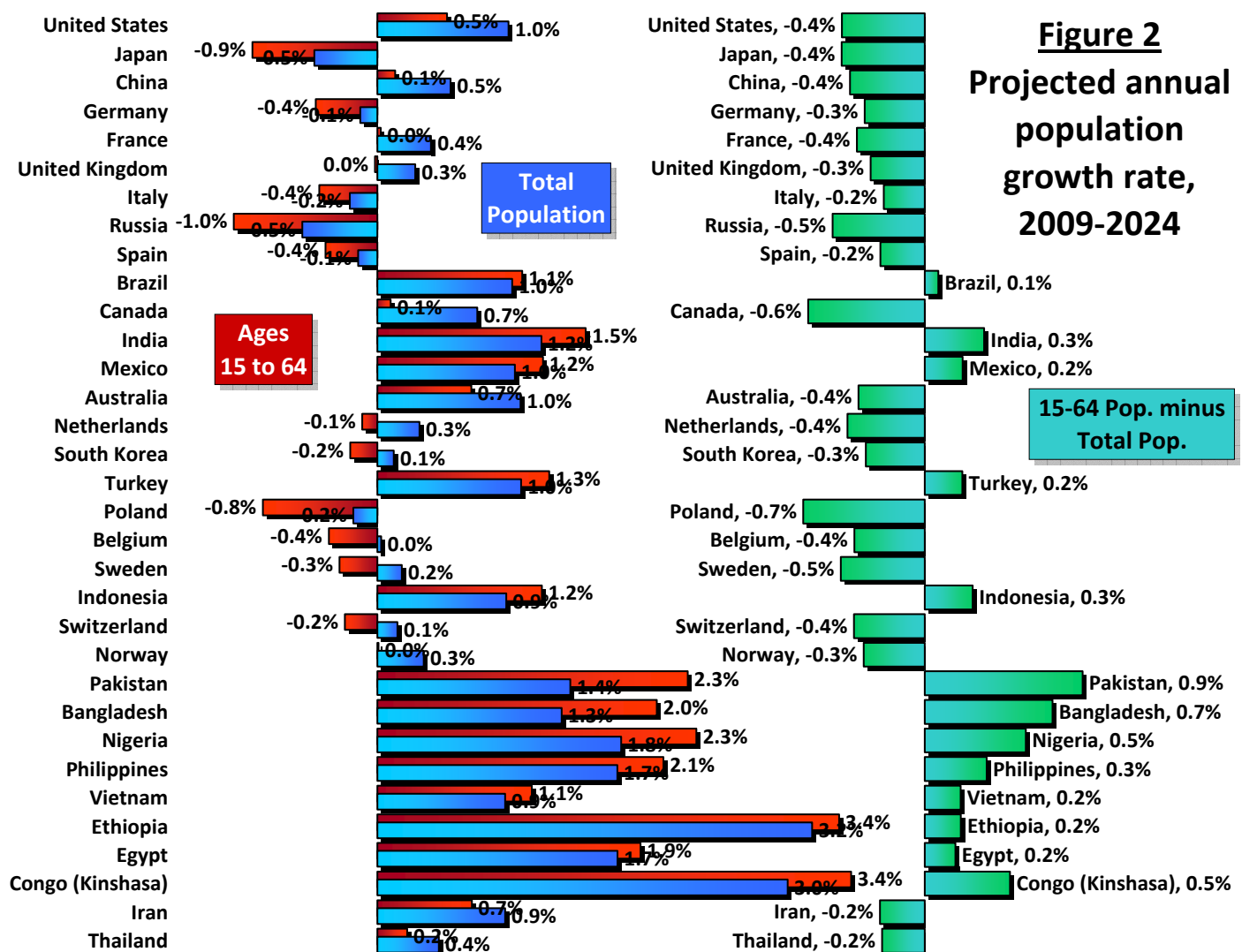
To the extent that the pattern of change in the working-aged population drives a similar pattern of change in the labour force, its contraction will reduce the labour supply contribution to economic growth, shifting the emphasis towards productivity, increasing exports, and import substitution in order to expand Gross Domestic Product. In this regard, two further aspects of demographic change must be considered: the rate of change of the working-age population, and this rate in the context of overall population growth. Figure 2<sup>2</sup> addresses these two facets of demographic change.

First note that while Canada, the United States, and Australia are not projected to see their working-aged populations decline during the projection period (up to 2024) – the result, directly and indirectly,

of relatively high immigration rates enjoyed by these countries – their working-aged populations are projected to increase very slowly, with average annual growth rates in the range of 0.1 percent in Canada, 0.5 percent in the United States, and 0.7 percent in Australia. Thus, to the extent that these growth rates are equated with changes in the size of the labour force, these three countries will also feel the economic consequences of slow growth in the labour supply contribution to economic growth.

<sup>2</sup> Ibid

The second facet is the broader consideration of the projected growth rate of the working-aged population compared to the total population, as this will indicate the demographic context within which changes in the size of the working-aged population will occur. Figure 2 shows that there will be four types of demographic experience in these 33 countries during the 2009 to 2024 period. The first will be those countries where both the total and working-aged populations grow, and where the working-aged population increases faster than the total population (and hence significantly faster than the non-working-aged population). This group includes: Brazil, India, Mexico, Turkey, Indonesia, Pakistan, Bangladesh, Nigeria, Philippines, Vietnam, Ethiopia, Egypt, and the Congo. These countries will have the opportunity to capitalize on a demographic dividend, as their working-aged population will increase in size relative to their non-working-aged population. The remaining countries, while falling into three distinct groups, will all be confronted with a demographic cash call, as their non-working-aged populations will increase in size relative to those of working age.



**Figure 2**  
Projected annual  
population  
growth rate,  
2009-2024

The second group of countries includes those who will experience growth in both their total and working-aged populations, but where total population will increase faster than their working-aged population. This group – where the non-working-aged population will increase faster than the working-aged

population over the next fifteen years – includes: the United States, China, France, Canada, Australia, Iran, and Thailand. The third group includes those countries whose working-aged populations are projected to decline while their total (and hence non-working-aged populations) are projected to increase. This group includes the United Kingdom, the Netherlands, South Korea, Belgium, Sweden, Switzerland, and Norway. The final group includes those who are projected to see declines in both total and working-aged population, with the shared characteristic of their working-aged population declining faster than their non-working-aged population. This group includes Japan, Germany, Italy, Russia, Spain, and Poland.

While from a labour supply perspective the concern is specifically with the rate of change in the working-aged population, in a broader social policy context it is the relative size of the working and non-working-aged populations that are of real interest, for it is the working-aged population that typically provides the tax base to support intergenerational transfers in programs such as education, social security, pension, and health care. The demographic beneficiary ratio, the combined number of people under the age of 15 and 65 and older per 1,000 people aged 15 to 64, provides an index of the relative magnitude of this intergenerational transfer relationship. The demographic dividend projected for the first group of countries will be indicated by a decline in the demographic dependency ratio, while the cash call for the rest of them will be indicated by an increase.

As Figure 3<sup>3</sup> shows, most countries will experience an increase in demographic beneficiary ratios, and hence an increased demographic load on their economy. The greatest increases in the load will be in countries such as Poland (a 35 percent increase), Canada (32 percent), and Russia (26 percent). The general range will be for increases of 15 to 22 percent, with the low end of the spectrum being the projected increases for Italy (10 percent), Spain (12 percent), and the United Kingdom (13 percent). These countries fall to the lower end of the scale due in large part to already having experienced large increases.

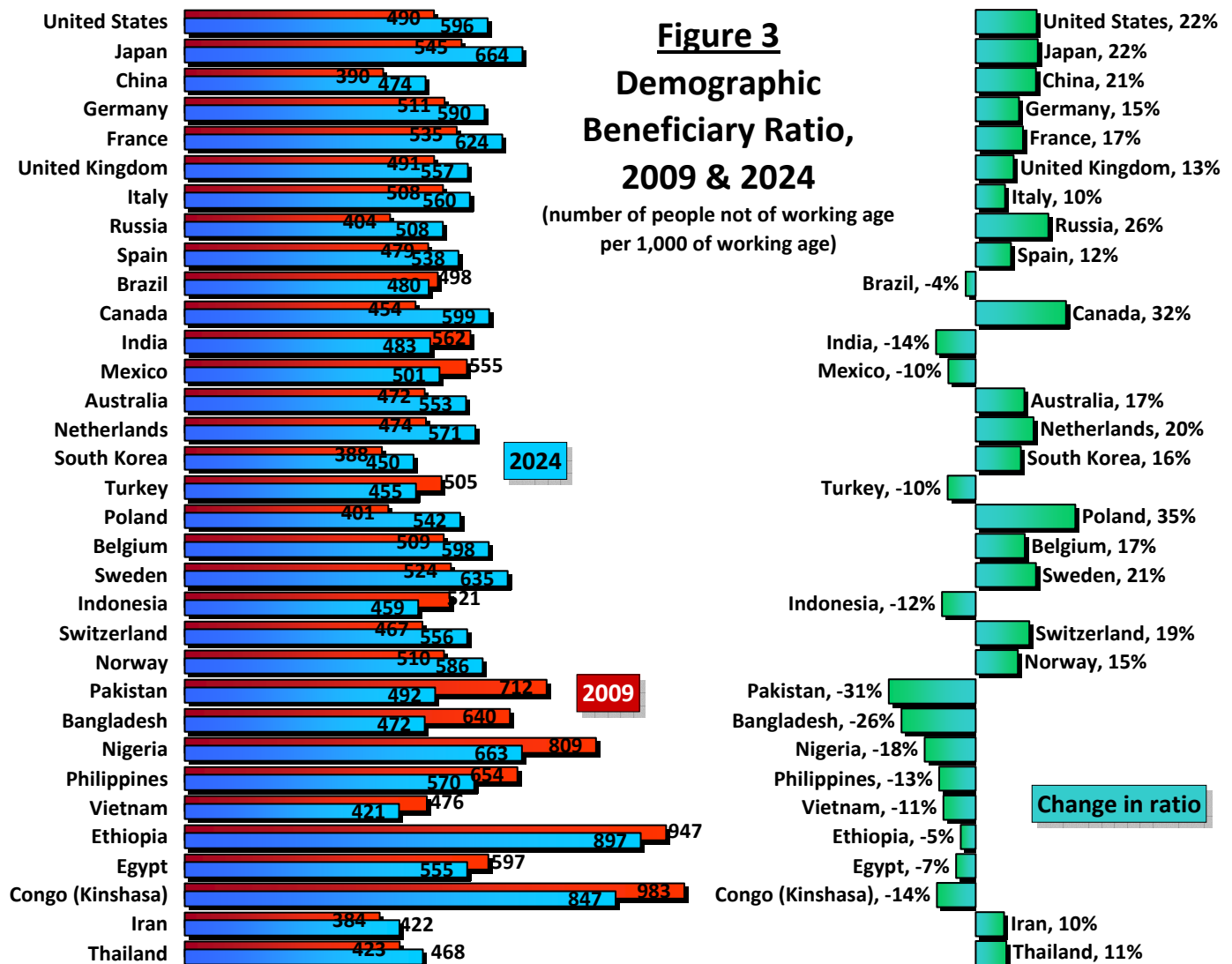
The countries which will experience a decline in the demographic dependency ratio fall into two groups. The first are those who will see a decline that brings them into the below 500 people not of working age per 1,000 of working age range currently experienced in most of the mature market economies. This group includes India, Mexico, Turkey, Indonesia, Pakistan, Bangladesh, Vietnam, Iran, and Thailand. With a relatively low intergenerational load and growing labour force, these countries have the opportunity – but not the guarantee – of being able to reap dividends from their changing demography. The remaining countries – Congo, Ethiopia, and Nigeria – will have greater challenges in reaping such dividends, for while their demographic beneficiary ratios are projected to decline, they will nonetheless be in the range of 663 to 897 people not of working age for every 1,000 of working age, continuing to representing a significant intergenerational load on their economies.

Clearly, there is a wide range of demographic contexts for future labour supply, ranging from absolute and relative growth to absolute and relative decline. How societies and economies decide to respond to these changes will depend largely on their institutional frameworks, ranging from migration policy to educational capacity. In market and mixed economies, there will not be a single response, but rather a range of formal and informal responses that will incrementally change their labour supply context. In the remainder of this brief review, these elements of adjustment will be considered individually, acknowledging that they will likely occur simultaneously, and may characterize countries with declining or slowly-increasing working-aged populations and increasing beneficiary ratios. As the roots of such

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<sup>3</sup> Ibid

situations are in demography, demographic adjustments are considered first before looking beyond them to the behavioural, production, and productivity adjustments that will also be involved.



### 3. Demographic Adjustments

One of the most common responses to demographic constraints on labour supply is to change the demography. Historically this has involved migration and, in a national context, immigration. There are two formal approaches to labour-supply-influenced migration policy. The first is permanent immigration (including, usually but not always, a path to citizenship) which is applied when demography indicates long-term labour supply issues. The second is temporary immigration (via work permit and temporary visa programs) which is often used when labour supply constraints are seen to be short-term, either in general or in a specific skills category. Both of these formal sources of migrant workers are viewed in different lights by different audiences, often creating a situation where governments cannot easily change (and specifically increase) immigration levels. This often leads to an implicit reliance on a third approach to augmenting labour supply, the tolerance of unauthorized migration.



The strengths of permanent immigration are its permanence, its expansion of both domestic labour supply and domestic consumption demand, and its welcoming of newcomers as citizens. Further, its permanence means that the next generation of workers is also augmented to the extent that immigrants have children. In spite of these labour force benefits, immigrant workers are rarely universally welcomed. Within the labour supply context, resident workers often see immigrants as taking “their” jobs or as driving down wages; such opposition is as old as immigration itself. As well, non-labour-force-based objections to immigration may also be raised even when the purpose is labour force driven.

In environments where labour market tightening is short-term or where there is vociferous opposition to increased permanent migration, temporary migration is often the demographic policy approach. The virtue of this approach is that it can be targeted to both skills and duration, and is clearly defined as temporary in the eyes of the resident community. From a labour supply perspective, there can be a number of limitations to this approach, most commonly that the short time period does not permit training and localization costs to be fully amortized. More broadly, the lack of commitment on both sides does not fit well into a social model of migration, as the host region may come to be viewed as a bunkhouse or a work camp by both the host community and temporary workers. There are often three additional implementation issues raised with respect to temporary worker programs. The first is the objection about taking “residents’ jobs” and driving down residents’ wages; the second is that the tightening is often not as temporary as first thought, so the demand continues beyond the permit period; and thirdly, the worker often sees continued opportunity beyond the end of the permit and moves into the un-authorized worker pool.

Given the long-term nature of shrinking labour supply that these mature market economies will experience over the next couple of decades, temporary worker employment is not likely to be an appropriate overall solution, although it may provide benefits in very specific circumstances. This realization, combined with some opposition to continued permanent immigration, has recently shifted policy attention towards a home-grown labour supply solution, with increased discussion of the promotion of increased births as one potential solution to labour supply issues. While of some charm, this is truly a long-term perspective, as someone born today will not realistically enter the labour force for at least two decades.

The demographic roots of shrinking working-aged populations in every country lie with historical birth rates that fell below the “replacement level”, or the level at which two parents just replace themselves in the population. Over the long-run this creates a situation where, without migration, the population shrinks and ages, as there would always be more parents (older people) than children (younger people). Given these roots, it is understandable that the cradle will be viewed as a source of workers rather than a boat or a 747 – understandable, but not particularly practical. The declines in birth rates stem, ultimately, from the choices and opportunities provided to women in mature market economies. It is unlikely that practical policies would bring anything but marginal changes in birth rates, as such policies may be perceived as removing choices and opportunity from these women. There are a number of other implications of a pro-natal approach to solving labour supply: increasing birth rates in the short-run will reduce labour supply as it will take women out of the labour force for a period of time; it will increase the beneficiary ratio as it will increase the non-working-aged population for two decades at least; and in most of these economies the bulge in the population has already aged through the high fertility stage of the life cycle.

## 4. Beyond Demographics

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Having reviewed both the demographic roots to tightening labour markets and some of the demographic responses to them, it is appropriate to briefly consider the range and general characteristics of the non-demographic approaches.

### 4.1 Behavioural Change

Implicit in the objection to immigration whereby a source of workers is “taking away” domestic workers’ jobs is the concept of there being a pool of domestic workers who would take the jobs if the immigrant worker was not present (it is generally agreed that domestic workers do not do so because the wages offered are too low). Putting on hold for a moment the discussion of the consequences of increasing the cost of labour to focus narrowly on the implications of increasing supply from domestic sources, the question then becomes: *“If domestic wages rise, either broadly or sectorally, are there workers to do the work?”*. In the first instance, the initial answer may be yes, as without additional migrant workers unemployment rates would fall, presuming that there was a match between skills and jobs, thereby effectively increasing the number of workers from the same population.

Beyond the additional number of workers that would result from reduced unemployment, labour force participation rates would have to increase if the number of workers from a given population was to grow. There is growing discussion (much of it implicit) in an increasing labour force participation approach to labour supply as many countries are looking at the pension funding issues related to the size of the pensioner population relative to the contributor population and concluding that retirement age must be postponed to sustain pension plans. While this retention of workers would increase the number of workers from the same population, it also has some limitations. Perhaps the primary limitation is that it might not retain skilled workers, as the highly skilled are often those best prepared for retirement and hence least susceptible to pension motivated reasons for continuing to work. Further, there are capacity and physical-ability concerns about the productivity of an older workforce, particularly with respect to high stress critical operations and physical production jobs.

The potential to increase the labour force participation of younger people who are not currently in the labour force is also often cited as a source of potential labour supply. Again, while definitely worth consideration, such an approach in many mature market economies will be more appropriate with respect to specific situations, rather than as a broad labour supply enhancer. Participation rates in such economies are generally high throughout the working stage of the lifecycle, with there not being a large pool of people of the prime working ages with workforce skills that are outside the workforce. The costs of bringing such people into the workforce, and in ensuring they have the required skills, may place significant entry barriers to labour supply adjustment from this source.

One segment of the population that demonstrates relatively low participation rates and that might offer potential is the youngest adult group. Currently participation in the 18 to 24 age group in many mature market economies is relatively low, reflecting the premium paid for skills in these economies and the use of post-secondary education as the vehicle to transmit these skills. There is some interest now in reducing (not eliminating) the duration of formal post secondary education, with “learn-and-earn” programs being used to bridge places of education and places of work. Again, while perhaps of merit in its own context, this approach cannot yield a significant number of additional labour force participants as in most of these countries this younger population is significantly smaller than the retiring population.

## ***4.2 Imports and Outsourcing as a Labour Supply Policy***

The approaches discussed thus far focus on increasing the supply of labour, either directly in the case of participation or indirectly in the case of migration and natality. These however represent only one aspect of managing the changing dimensions of labour markets (and human resources) that will be driven by demographic change. For example, while not generally viewed within such a framework, in addition to the “who”, the “where” can also be addressed: reducing local production and increasing imports is implicitly a labour market policy, as imports effectively represent labour in a box. While many industries in many countries seek protection from imports, the reality is that often the size of the labour force within the country would not be adequate to domestically produce all of the products currently imported, as pursuing import substitution by increasing local production would increase local labour demand rather than reduce it.

In a comprehensive labour market framework, importing goods and services may be simply characterized as changing the “where” of the workplace. As mentioned earlier, if the tightening of labour supply results in increased labour costs, while one response will be to draw people into the workforce, another will be to seek lower cost labour sources, some of whom may be migrants, but many of whom will be those working in other regions. The process of importing goods and services is merely the companion of migration, with the work traveling to the worker in the first instance, and the worker to the work in the second.

## ***4.3 Increasing Productivity***

Yet another dimension of the potential responses to labour supply issues within a labour market management framework is not to attempt to increase the supply of labour, nor to find it elsewhere, but rather to change the “how” of work. In the narrowest sense, output per worker can be increased by an increase in the hours of work, by shifting workers from part-time to full-time and lengthening the work day. While this offers some potential, it will inevitably face diminishing returns and the backward-bending supply curve of labour. Further, in relatively mature markets and for highly skilled workers, a permanent “work more” approach is likely to be of limited long term attraction to workers.

An additional direction of productivity growth will be to effectively get more output per worker by changing the skills that workers have and by changing the technology that workers use. Again, this approach has both strengths and limitations. In terms of strengths, it avoids many of the political issues associated with the demographic approaches, and it reinforces a drive towards continuous innovation and up-skilling that will, ultimately, have to characterize mature market economies if they are to pay the bills associated with aging populations. The limitations are not trivial: first among them is their cost, in terms of both education and capital; second is the existence of many collective agreements that may prohibit such adjustments; and third is that there are many jobs that might not easily lend themselves to such transformations.

## **5. Conclusions**

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The now inevitable shrinking of working-aged populations in many of the world’s major countries over the coming decades will bring substantial change to their economies, societies and to the firms who work within them. The adjustments to these demographic changes will be long-run, complex, multi-dimensional, cumulative, circular, and fundamental. Given this inevitability, successful adaptation to such

a significant demographic change will require foresight and planning for the management of human resources. Each country, each firm, can anticipate the changes that they will face, but effective management will require everyone to manage the change and, in doing so, manage to change. If not, they will inevitably become managed by it.

## 6. Firm Strategies

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The foregoing discussion considered strategic responses to tightening labour supply from an aggregate perspective; to close, it is appropriate to review the process by which an individual firm might articulate human and capital resources in such conditions.

### Step 1: Acknowledge the reality of the organization and the labour market

*Principle:* Know the firm, know the workers.

*Approach:* Preparation of a long-term human resources assessment and strategy.

### Step 2: Manage to change the work, workplace, and workers

*Principle:* Assess non-labour supply approaches to labour supply constraints, reduce labour requirements by increasing output per worker.

*Approach:* Change work.

#### A. Change how work is done

- 1) Change work within the organization
  - a) Conduct and implement a labour-efficiency audit
  - b) Substitute technology for people
- 2) Unbundle: shifting work outside organization
  - a) Outsource labour intensive production activities
  - b) Offload at the point of sale of outputs
  - c) Offload at the point of purchase of inputs

#### B. Change who the work is done by through partnerships/mergers/collaborations

- 1) Eliminate redundancies/realize benefits of economics of scale
- 2) Seek partnerships to reduce human resources requirements

#### C. Change what is produced

Focus on the most profitable market, not merely the biggest; alter your product line to reduce labour demand while increasing the bottom line.

### Step 3: Manage to change the primary labour market

*Principle:* Change the “who” and “how” of recruitment and retention.

*Approach:* Change relationships with workers and residents

#### A. Change the relationship with workers

- 1) Pay and productivity; pay more to attract and retain better workers
- 2) Change the terms of work: benefits and hours

- 3) Invest in workers; enhance engagement and productivity through additional education and training
- 4) Brand to be the best workplace; be a labour magnet
- B. Eliminate institutional and attitudinal barriers to employment
  - 1) Job descriptions and credential requirements as measures of competency to do the work not as barriers to competent workers
  - 2) Phase attainment of credentials and skills
  - 3) Look for competent people in the community who have not been traditionally considered as part of the labour supply

#### **Step 4: Manage to change the range of the labour market**

*Principle:* Change the “where” of recruitment.

*Approach:* Increase access to workers who reside outside of your primary market

- A. Extend the reach of recruitment and employment
  - 1) Develop strategies for temporarily-resident workers
  - 2) Develop strategies for workers’ families
  - 3) Reduce inter-regional certification and institutional paper barriers
- B. Working together in partnerships to promote regional labour force strategies