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Insights for Global Development Solutions
ABOUT DEVELOPMENT DIGEST

The Development Digest is a half-yearly publication that features key works from teams based at the World Bank Group Global Knowledge and Research Hub in Malaysia.


EDITOR: Joshua Foong

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TABLE OF CONTENTS

WELCOME TO ISSUE THREE ......................................................... 5

ISLAMIC FINANCE FOR DEVELOPMENT ................................. 7

DATA FOR DEVELOPMENT ...................................................... 17

COUNTING GDP ................................................................. 27

ASEAN AT 50 ................................................................. 31

MIGRATING TO OPPORTUNITY ........................................ 40

IMMIGRANTS AND PRODUCTIVITY .................................. 48

LEARNING FROM MALAYSIA ........................................ 53

MICROFINANCE REVOLUTION .......................................... 59

WOMEN IN PRIVATE-SECTOR MALAYSIA ....................... 65

INDUSTRIAL POLICIES VS PUBLIC GOODS ..................... 71

ASSESSING FORECAST UNCERTAINTY ......................... 76
Selamat Datang! (Welcome!)

The World Bank Group Global Knowledge and Research Hub in Malaysia is pleased to present the third issue of the Development Digest, a publication that features key research conducted by various specialists across the World Bank Group over the past six months.
Insights for Global Development Solutions

The World Bank Group Global Knowledge and Research Hub in Malaysia publishes the Development Digest every six months, presenting key research emerging from the Hub. The focus of the Development Digest is to share Malaysia’s people-centered developmental expertise and to present new policy research on local, regional, and global issues.

The Development Digest seeks to capture the work of the Hub, combining frontier research from the Development Economics (DEC) teams, Global Practices (GP) teams, and the Country Management Unit based in Malaysia, in one easy-to-read magazine-type publication.

We begin this issue with an update on green Islamic financing, where Malaysia leads the way with the issuance of the world’s first green corporate sukuk. Then, we move into topics like ASEAN at 50, open data, the role of GDP in development, migration, and microfinance. Other articles include one on industrial policies versus public goods to spur growth, and another on economic forecasting.

The Digest is a snapshot of the rich diversity of work in the Malaysia Hub, which continues to feature Malaysia’s development experience and growing role as a center of expertise for global development solutions.

We wish you an insightful read!

FROM THE TEAM at the World Bank Group Global Knowledge and Research Hub in Malaysia
Income growth is not the sole aim of economic development. To many, an equally important, albeit less quantifiable, outcome is a sense of progress for the entire community, and a confidence that prosperity is shared equitably – and sustainably – across society for the long term.
Inclusion Through Innovation

INCLUSIVE AND sustainable development looks beyond GDP growth and can strengthen nations for generations to come. However, rising income inequality has impeded social mobility, increased social tensions, and undermined effective governance in many countries in recent decades. In the World Bank Group, we are firmly committed to our twin goals of helping reduce the number of people living in extreme poverty, and to promote shared prosperity, particularly among the bottom 40 percent of the population.

Investments in infrastructure are essential for meeting both goals. Whether it be by connecting farmers to markets or by providing families with electricity and clean water, infrastructure investments can transform lives for the better. However, analysts estimate that developing countries require between US$1.7 trillion annually in infrastructure investment just to keep up with the rate of growth, while actual investment pledged each year is closer to US$880 billion – far short of the region’s needs.

To close this huge infrastructure gap, we need more options for investment financing.

It would be better yet if these options adhere to our principles of sustainable development, particularly given the specter of climate change. A tall order, but not impossible.

Unlocking a New Dimension of Islamic Finance for Global Development

Recently, with support from the World Bank, Malaysia launched a new initiative that addresses both these principles: financing sustainable, climate-resilient growth.

When Islamic finance shot to prominence in 2008, performing well even during the global downturn, the investment community started taking notice. Though representing a tiny portion of the global financial market, the growth of Islamic finance has been rapid. By 2015, the industry had surpassed US$1.88 trillion in size and its banking assets had doubled in merely four years.
Islamic finance may just provide that extra helping hand to deliver more infrastructure to emerging markets and developing economies.

Central to the premise is the *sukuk*, a bond that generates returns to investors without infringing Islamic *Shari’ah* principles, which prohibits the payment of interest. Given that the Islamic capital market is still relatively small, sovereign and quasi-sovereign *sukuk* can be used to finance infrastructure projects that can facilitate further inflows of private capital. Project-specific *sukuk*, instead of general-purpose *sukuk*, may be particularly helpful in bolstering infrastructure financing.

**The World’s First Green Sukuk**

In parallel, another development pioneered by the World Bank Group – ‘green bonds’ – is also making headway. Since 2008, the World Bank has issued US$10 billion in bonds through our green bond program for climate-sensitive investments, and has brought greater transparency and clarity to issuers and investors by participating in the crafting of the Green Bond Principles (voluntary guidelines framing the issuance of green bonds) and by setting best market practice for reporting on the use of proceeds. New issuances in the global market are expected to exceed US$120 billion in 2017.

Enter Malaysia with its innovative ‘green *sukuk*’ initiative, which will channel *sukuk* for climate-friendly investments, thus helping close the gap for both infrastructure and green finance.

Malaysia is already a global leader in leveraging Islamic finance for infrastructure development, issuing more than 60 percent of the world’s infrastructure *sukuk*. Now, the country’s regulators are taking it one step further and using investments to achieve a public good. Launched this July with the issuance by a Malaysian company of RM250 million (about US$59 million) in bonds to finance a 50-megawatt solar photovoltaic plant, the ‘green *sukuk*’ is a bold new tool for development.
The framework underlying this instrument is the result of collaboration between the Securities Commission of Malaysia, the Central Bank of Malaysia, and the World Bank Group. This was envisioned when Malaysia and the World Bank Group celebrated 58 years of partnership with the formal opening of our Global Knowledge and Research Hub in Malaysia in 2016.

The ‘green sukuk’ is one of various corporate fixed-income securities of this type coming out of Malaysia.

We hope that many similar issuances will follow, in Malaysia and in other countries, and that innovative green financing becomes the norm, not the exception.

This development would take us one step closer towards our goal of sustainable and inclusive growth.

This article was first published on World Bank’s East Asia & Pacific On the Rise blog and the South China Morning Post. To access the blog, visit bit.ly/VK_greensukuk. To access the opinion editorial, visit bit.ly/SCMP_greensukuk.

VICTORIA KWAKWA is the World Bank Vice President for the East Asia and Pacific.
IN 2016, the World Bank Group Global Knowledge and Research Hub joined a Technical Working Group with the Central Bank of Malaysia and the Securities Commission in supporting the Malaysia Green Finance Program, leveraging our experience and expertise in green financing. The program aims to encourage investments in green or sustainable projects through the development of green Islamic finance markets; initially in Malaysia, and subsequently, in the ASEAN region.

The program has supported the launch of the first green sukuk in the world on June 27, 2017. The sukuk is a green Islamic bond, where the proceeds are used to fund a specific environmentally-sustainable infrastructure project, such as the construction of renewable energy generation facilities.

Green sukuk have the potential to further broaden this market as well as to help bridge the gap between the conventional and Islamic financial worlds.
The sukuk should be attractive to conventional investors if they offer reasonable risk-adjusted returns and are properly marketed. A sukuk that meets these criteria and provides funding for an environmentally-sustainable project could be particularly attractive to environment-focused investors for two principal reasons.

First, sukuk provide investors with a high degree of certainty that their money will be used for a specific purpose. To comply with the underlying Shari’ah principles, the funds raised through the issuance of a sukuk must be applied to investments in identifiable assets or ventures. Therefore, if a sukuk is structured to provide funds for a specified infrastructure project, such as a renewable energy project, there is little chance the investors’ money will be diverted and used for another purpose.

Second, many more environment-focused investment products exist on the equity side of the capital markets than on the fixed-income side. Since most investors in environment sustainability want to know precisely how their money will be used, bonds that are general obligations of an issuer have limited appeal unless all activities of the issuer meet the investor’s environmental standards. Sukuk, which are most like a conventional fixed-income security, could help fill the fixed-income supply gap for environmental investors, to the extent the proceeds of a sukuk are earmarked for an environmentally-beneficial purpose.

The Global Knowledge and Research Hub has been partnering with public and private institutions in Malaysia and elsewhere to develop modern and integrated financial services and markets. It is through this partnership that the new green Islamic finance initiative has been spearheaded, and will contribute a new and innovative financial product that can be used throughout the world.

This article was first published on World Bank’s East Asia & Pacific On the Rise blog. To access the blog, visit bit.ly/WB_greensukuk.

FARIS HADAD-ZERVOS is the World Bank Country Manager for Malaysia.
LEARN ABOUT
GREEN SUKUK
GREEN FINANCE

Malaysia launched its first green Islamic bond to finance sustainable, climate-resilient growth in countries.

SUUKKUK

Sukuk are certificates representing assets that are mutually owned by both buyer and seller. These assets could be in a specific shari'ah-compliant project or investment activity that prohibits interest.
Asia requires $1.7 trillion a year in infrastructure investments, while actual investment pledged each year is closer to $880 billion—far short of the region’s needs. Green sukuk can help close the gap.

WHAT IS GREEN SUKUK?

Proceeds from green sukuk must be used only for climate-friendly investments.

Green sukuk bridges the gap between conventional and Islamic financial worlds. It is in line with the objectives of shari’ah to protect the environment.

A new and innovative financial product that can be used around the world.
GREEN SUKUK CAN HELP SAVE THE PLANET

Attracts a broad investor base

Green sukuk is open to conventional and green investors. It is attractive for investors seeking climate-friendly investments that are shari‘ah compliant.

Meets sustainability requirements

Appeals to Islamic financial market and can deliver more infrastructure financing to emerging market and developing economies.

Ensures funds are channeled to environmentally sustainable projects

Green sukuk provides investors with a high degree of certainty that their monies will be used solely to finance green projects. Funds raised will not be used for other purposes.

For more information, visit:
- worldbank.org/malaysia
Data is becoming increasingly relevant for economic development. For Malaysia to achieve high-income status by 2020, improving the availability and quality of data can further drive productivity in the private sector, in academic research, as well as help make public service delivery more efficient.
Towards High Income

THE WORLD is witnessing an unprecedented explosion of data, which impacts development through various channels; better policy-making and public service delivery, empowering homegrown research, and enabling private-sector economic growth. Enhanced data is both an input and a result of the digital economy.

Rapid technological improvement has resulted in a greater volume and wider range of data. Digital data, which in 2013 amounted to 46 sextillion (10^{21}) bytes, overtook analog data around 1998. For about three decades, computing power has doubled approximately every 18 months, generating yottabytes (10^{24} bytes) of data. This will continue to grow rapidly in the future.

Data collection, management, and dissemination is evolving rapidly, streaming into a digital economy expected to add US$1.4 trillion into the global economy by 2020.

Data improvements are creating opportunities for policymakers, researchers, companies, and citizen groups to make better, more timely and more informed decisions, enhance accountability, and increase economic growth.

The public sector is increasingly using data to formulate, monitor and evaluate policies, as well as to improve public service delivery. The research communities and academia are using data to undertake empirical analysis that could feed into other parts of the economy. The private sector is using data for product development, market analysis, and evidence-based decision-making or assessment.

For instance, reliable and timely microdata is an essential ingredient for research and policy analysis. It allows public policies to target households, schools or municipalities, raising possibilities to assess distributional impact, track implementation and monitor results. Access to data can also improve service delivery as it raises the capacity of citizens to provide feedback, while strengthening government accountability.

Advances in technology allow rapid information disclosure, enabling businesses to gain different insights on market structure and service delivery.
Realizing data’s potential impact on Malaysia’s economic development calls for a more cooperative and open data ecosystem. The demand for statistical products and services in Malaysia keeps growing in quantity and sophistication.

**Data is the fuel that runs the digital economy, which is estimated to be 18 percent of Malaysia’s GDP.** Improving the open data environment will be critical for Malaysia’s data ecosystem to match that of high-income economies.

Many developed economies have shown that creating a conducive environment for data sharing leverages the growing opportunities that policy analysis, service delivery, or the digital economy can offer. Malaysia’s data systems have credibility, but could further move into an integrated ecosystem that can properly support Malaysia’s development agenda.

The current national statistical system can be described as a “federated system”. The Department of Statistics Malaysia (DOSM) is the largest statistical agency in the country. The Statistics Act gives DOSM wide authority to collect and interpret statistics. However, DOSM has no similar mandate to coordinate or direct the national statistical system. Thus, databases maintained by various ministries are sometimes not fully integrated at the national level; combined with unclear policies for data dissemination, this constrains the amount of data made public.

DOSM recognizes the need to constantly evolve to meet growing information needs for the formulation and monitoring of government policies. Yet users keep asking for more detailed and timelier statistics, which DOSM aims to serve as part of the DOSM Transformation Plan 2015–2020.

The private sector also has a role to play. A major challenge for the private sector in Malaysia is its reluctance to share data due to privacy policies or corporate competitiveness. If more data could be pooled and shared, public benefits could be generated. The private sector is warming up in adopting big data analytics (BDA) and the Malaysia Digital Economy Corporation (MDEC) is providing a structured BDA framework to increase its adoption rate.
The Rise of Open Data and Implementation Challenges

Open data is a tool for transparency, accountability, and innovation. More open data also means more opportunities to conduct better research. High-income countries that have higher degrees of openness have more publications per capita (1.9 on average, compared to the overall average of 0.8).

A survey conducted by the World Bank locally in September 2016 had more than 75 percent of data-using survey respondents agreeing that data availability contributes to Malaysia’s research capacity. However, 89.5 percent of them reported that the data was inadequate in terms of granularity needed for rigorous economic research.

As of 2016, Malaysia’s ranking in the Open Data Barometer (ODB) – a global measure of how countries are publishing and using open data – was 53, lower than most advanced economies and many regional economies. Recognizing the room for improvement, the Malaysian Administrative Modernization and Management Planning Unit (MAMPU) has released 1,982 data sets, and aims to release 7,000 datasets by 2020. There is a clear government aspiration to be among the top 30 countries in the ODB.

Indeed, MAMPU requested the support of the World Bank Group to carry out an Open Data Readiness Assessment (ODRA) exercise to evaluate the open data environment in Malaysia in a more holistic manner. It is the first country in ASEAN to implement the ODRA methodology, which focused on how open data could support the government efforts to move towards more effective, transparent and accountable public service delivery.

The ODRA concludes that Malaysia is well-placed to realize significant socio-economic gains from open data if it can successfully address some remaining obstacles to openness.
Increasing the Strategic Use and Impact of Data in Development

Civil society, the business community and academia in Malaysia are avid consumers of various types of data. Key institutions such as DOSM or MAMPU have adapted their means of communication and dissemination with technology, emphasizing online communications to reach a broader public audience. The next frontier is including the private sector and civil society more forcefully to ensure data relevance, and strengthen data analysis collaborations with the private sector and researchers.

Ongoing policy and public service delivery data reforms will strengthen a system that is already very strong and credible. These efforts need to be matched by a broader ecosystem approach that further facilitates the exchange of granular data among public, private and research communities to reap all its potential benefits.

The statistical infrastructure in Malaysia needs to be restructured to reap efficiency in response to growing demand. Statistical offices in more-developed countries have gradually moved from being organized around economic and social statistics (e.g. national accounts) into specialized units (e.g. survey departments) that serve multiple statistic outputs. This is complemented with an increased use of administrative data to reduce the need of dedicated surveys.

Further, clearer legal and policy environments for data management in Malaysia would facilitate open data dissemination. Data holders are not always confident about the application of general rules and regulations related to privacy and confidentiality, and individual agencies may also face specific internal data management regulations. This creates a fragmented data management environment, where most data exchanges are decided on a case-by-case basis, with senior managerial approval necessary for most approvals.

Strengthening the interaction between data providers and users would serve to better understand current and future data demands. This can be complemented with efforts to educate the users and the public on understanding data. In addition, reinforcing on-going efforts to strengthen data providers’ websites could provide complementary sources of information to gather up-to-date information on user expectations.
Liberalizing more products could be done through a forward-looking microdata release policy that sets clear principles for dissemination and anonymity protection. Government agencies can then actively seek out stakeholders to provide more granular data for high-demand areas, publishing data inventories, and having standardized and streamlined procedures for requesting data. It could also be supported by increasing use of a ‘secure room’, where microdata can be released to researchers.

**Conclusion**

Making data “open” promotes efficiencies, increases transparency, creates economic opportunities, and increases people’s participation in the contribution of ideas.

By unlocking data, the government can leverage the creative and rigorous policy recommendations from the research community for its policy analysis and planning.

Data is vital for research and economic development, and the movement towards open data is gaining traction. Malaysia is already well-positioned to take its open data program forward, in line with the 11th Malaysia Plan’s aspirations of becoming a digitally-strong and mature society. Connecting the various existing elements of its open data environment better can only help to generate additional and significant returns.

*For the full report of the Malaysia Economic Monitor June 2017: Data for Development, visit bit.ly/MEM_201706.*
Malaysia’s statistical system is decentralized with multiple production units, requiring strong coordination and leadership.

Databases by various ministries are sometimes not fully integrated.

Restrictive data dissemination policies limit access to data by government agencies and the public.

User feedback is important to ensure data relevance.

Enhanced data collaboration within the public sector and amongst the public sector, private sector & research community.

Malaysia’s data ecosystem has credibility but needs to accelerate its modernization to become an integrated ecosystem.

Supporting Malaysia’s development agenda.

Public sector: Better public service delivery & policy-making.

Research sector: Empowering homegrown research.

Private sector: Enabling private sector growth.
WHY WE NEED OPEN DATA

The public sector is increasingly using data to formulate, monitor and evaluate policies to improve public service delivery. High-quality data is crucial for evidence-based policy-making.

The private sector uses data and information to plan effectively and improve performance. Timely and relevant data is important for private sector development.

Reliable and timely microdata is essential for research and policy analysis.

Limited access to granular data is a key constraint to research in Malaysia.

More granular data is needed to improve Malaysia’s research productivity and quality.

Wider sharing of public and private data generates public benefits.
Malaysia can benefit from a more integrated migration system to control irregular immigration. Agencies working in silos may contribute to the oversupply and undersupply of immigrant labor in certain sectors of the economy.

Urban transport planning and delivery in greater Kuala Lumpur often rely on non-comparable data units and definitions. Better integrated data systems would improve the analysis of current travel demands and patterns.

Better coordination is important for Malaysian agencies involved in policy development and implementation of social protection. A lack of coordination contributes to the fragmentation of data management and duplication of programs.

Malaysia can benefit from a more integrated migration system to control irregular immigration. Agencies working in silos may contribute to the oversupply and undersupply of immigrant labor in certain sectors of the economy.

An increased and more effective use of data can improve the management of cities. For example, policy analysis of local-level data has helped reduce crime in Malaysia, benefiting the population.
GETTING HIGH-QUALITY DATA

DISAGGREGATION
Data should be disaggregated sufficiently to inform decisions on policies and programs on specific areas

STANDARDS
Standardized data assists policy-makers to make comparisons and draw useful decisions

CLIENT-ORIENTED
Data should meet the needs of users and reflect important areas of interest

TIMELY
Data should be disseminated in a timely manner to increase the effectiveness of data analysis and service delivery.

ACCESSIBILITY
Data should be widely accessible and usable to the public while also taking steps to preserve personal privacy

ROLE OF DATA PRODUCERS

COLLECT
Collect and compile information in an information processing system

COLLABORATE
Work with government and service providers to improve data accessibility for users

DISSEMINATE
Provide easy-to-use, machine- and research-friendly data

INFORM
Publicize data availability widely and solicit feedback from data users.
The recent debate in Malaysia on whether it makes more sense to measure Gross Domestic Product (GDP) in ringgit or in dollars is a healthy one. It reflects a sound interest by many segments of Malaysian society in statistics that measure economic development and how it changes people’s living standards.

Faris Hadad-Zervos and Richard Record
When it Comes to Development, Does Counting GDP Count?

THIS IS the fundamental question: what does GDP really mean in the daily life of Malaysians? There are sound arguments on both sides. In a way, both are right, depending on which perspective is taken.

In the World Bank, we use different ways of measuring GDP, depending on what kind of comparison we would like to make. For the most part, and when it comes to measuring how the living standards of Malaysians are changing over time, it makes sense to calculate incomes, production or spending in ringgit terms.

In doing so, we correct for the effects of inflation by adjusting nominal changes into real terms, to capture real change over time – be it quarter by quarter, or year by year. In other words, we develop a real GDP estimate that is linked to constant prices from a base year, and therefore captures real growth in income over time, removing the impact of inflation. In this case, it does not matter if this is done in ringgit, dollars, bushels of wheat or any other unit of account. This allows us to have a clear picture of real changes over time.

It is important that we not lose sight of the fact that in practice, prices are constantly changing across the economy for fundamental reasons other than inflation.

For instance, this could be a change in the supply of a Malaysian export or the demand for it, which pushes real prices up and down. These are important changes to look at and that they reflect real changes in the country. It is the same with looking at the exchange rate, which is just another price.

Now, Malaysian companies and manufacturers who trade internationally will rightly worry about how their costs (especially the costs of inputs they must import) and sales (especially their exports) change due to movements in the exchange rate. If their profit margins drop because their dollar-denominated imported inputs are more expensive with the higher exchange rate to the dollar, they may feel that the country’s strong GDP growth statistics mean little. The same thing applies to Malaysian parents whose children study abroad, and who
must spend more ringgit to meet the same educational expenses they had last year.

These are legitimate concerns, but not ones that can be resolved by changing the way we measure GDP. Rather, we should focus not on changing the estimate, but rather by looking at the large number of factors impacting the exchange rate – many of which are outside of the control of policymakers.

At this point, it should be noted that in some cases, it does make sense to measure GDP in US dollars. This applies in cases where we need to compare Malaysia with other countries, say for example either the size of the economy, or the share of the population living below the local poverty line. To do this we need to convert into a common measurement. This could be any currency, but in practice it is usually the US Dollar.

However, the real question is whether GDP is a useful measure of development, irrespective of whether it is denominated in ringgit or in US dollar.

GDP is Just One Perspective

Malaysia has set itself the goal of becoming a high-income economy within a generation. In purely mathematical terms, this means reaching a specific threshold. In the World Bank, we consider countries to be “high-income” if they have a GNI (Gross National Income, a measure close to GDP) of at least US$ 12,235 per capita in 2018. We use the “Atlas
method”, which means we take a three-year average exchange rate, adjusted for inflation, to lessen the effect of fluctuations and abrupt changes.

This is just one indicator of progress. The true nature of a successful and prosperous nation cannot be distilled into one number, whether GDP, GNI or any other statistic. Malaysia’s true prosperity is to be reflected in the productivity of its human capital, in the opportunities facing Small and Medium Enterprises (SMEs) to grow, flourish and even fail, and in an economy where entrepreneurs and risk-takers face level playing fields and equal chances to succeed, and to fail.

Finally, and perhaps most importantly, measuring growth in GDP or GNI in per capita terms – no matter what the currency – is just an average. It’s a useful tool, but one that tells us very little about who is benefitting from growth and how wealth and prosperity is shared across the population. Is GDP growth being shared by all? Are the incomes of the highest and lowest earners converging or moving apart? This is of equal importance for policymakers, who concern themselves not only with triggering growth, but also its dispersion across regions and segments of the population.

Capturing this type of development requires counting a lot more than just one number. So, the real question should be: “Is GDP growth enough?”

This article was first published on World Bank’s East Asia & Pacific On the Rise blog and The Star Malaysia. To access the blog, visit bit.ly/WB_GDP. To access the opinion editorial, visit bit.ly/Star_GDP.

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RICHARD RECORD is World Bank’s Lead Economist for Malaysia.
The Association of Southeast Asian Nations (ASEAN) is 50 years old in 2017. Created as a loosely-constructed regional organization by five countries at the height of the Cold War, ASEAN has come far. Today’s 10 member countries have transformed ASEAN into a rapidly growing and vibrant community stretching across the Southeast Asian region.

Ulrich Zachau

The Association of Southeast Asian Nations (ASEAN) is 50 years old in 2017. Created as a loosely-constructed regional organization by five countries at the height of the Cold War, ASEAN has come far. Today’s 10 member countries have transformed ASEAN into a rapidly growing and vibrant community stretching across the Southeast Asian region.
Forging an Inclusive ASEAN

The signing of ASEAN Declaration on 8 Aug 1967 in Bangkok gave birth to ASEAN. Picture courtesy of ASEAN Secretariat.

FIFTY YEARS ago, the visionary leaders of Indonesia, Malaysia, Philippines, Singapore and Thailand founded ASEAN. As today’s 10 member countries of ASEAN celebrate the golden jubilee of the union, they can look back on half a century of extraordinary achievements. The story of ASEAN is an inspirational tale of collective development success:

1. The proportion of ASEAN people living in poverty, measured by an income of less than US$1.25 a day, has declined dramatically, from 47 percent in 1990 to 14 percent in 2015;1
2. Net enrolment of children in primary education increased to 96 percent;
3. The average under-five mortality rate has fallen to 25 in 2015, from an initial number of 82 out of every 1000 children in 2015.2

In most large ASEAN economies, growth is projected to increase in 2017 and 2018*. Its expanding middle class is fueling this growth.3

1 ASEAN: A Community of Opportunities, ASEAN Secretariat
2 ASEAN Statistical Report on Millennium Development Goals 2017, ASEAN Secretariat

For more information about ASEAN growth outlook, visit: wbg.org/eapupdate

DEVELOPMENT DIGEST – OCTOBER 2017
Starting with Nutrition and Skills

Volunteers from the community cook traditional Lao recipes with more nutritious ingredients to ensure that the children eat healthier meals. Lao PDR. Photo: Bart Verweij / World Bank

First, nutrition. A thriving ASEAN means ASEAN people with good health, skills, and opportunities – and good health and skills start early in life. Adequate nutrition of young children and babies, even before they are born, is essential for people to acquire the skills to attain their full potential. Malnourished and stunted children, due to slow brain development, will never be able to catch up. They will learn less, drop out of school more, and will be less productive and will never contribute fully to society. Collectively, this translates into reduced economic productivity and billions of dollars in lost revenue over generations.

Research shows that reducing the prevalence of chronic malnutrition or stunting can increase GDP by up to 11 percent a year⁴.

Why is good nutrition a priority for ASEAN? Because malnutrition and stunting rates remain extraordinarily high in many developing countries in the region, and around the world, despite progress with food security (Figure 1).

What can be done? Each ASEAN country faces its specific and unique malnutrition challenges. Some countries have succeeded in reducing stunting significantly, such as Thailand and Vietnam, and many are now prioritizing the fight against stunting.

Improving nutrition involves policies and programs in many areas, including health, water and sanitation, agriculture, food, community development, and education. Nonetheless, simple, inexpensive programs can make a big difference.

Indonesia, the Philippines, and Vietnam have been implementing programs to deliver 10 basic and inexpensive interventions (Figure 2). A
World Bank evaluation shows that these interventions have proven to be effective with a 76-to-1 benefit-cost ratio⁵.

**Figure 2: 10 Basic and Inexpensive Interventions for Malnutrition and Stunting**

<table>
<thead>
<tr>
<th>Intervention</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Salt Iodization</td>
<td>Multi Micronutrient Supplementation in Pregnancy Including Iron-Folate</td>
</tr>
<tr>
<td>Calcium Supplementation in Pregnancy</td>
<td>Energy-Protein Supplementation in Pregnancy</td>
</tr>
<tr>
<td>Vitamin A Supplementation in Childhood</td>
<td>Zinc Supplementation in Childhood</td>
</tr>
<tr>
<td>Breastfeeding Promotion</td>
<td>Complementary Feeding Education</td>
</tr>
<tr>
<td>Complementary Food Supplementation</td>
<td>Severe Acute Malnutrition Management</td>
</tr>
</tbody>
</table>

Improving nutrition and reducing stunting will benefit the poor the most. It will provide more people with the skills and opportunities they deserve. A nutritious ASEAN will be a more inclusive and prosperous ASEAN.

**An Empowered ASEAN Workforce**

Second, can ASEAN labor markets become more integrated and inclusive to provide greater opportunities for workers across member countries?

countries? By 2025, 65-70 million new workers are expected to enter the labor force of ASEAN. How can they benefit from the ASEAN Economic Community? Approaches and policies will differ by skill levels:

» For **high skilled** professionals, countries may consider establishing common standard professional certification program (with no or minimal additional national certification requirements). APEC has one for engineers, for example. Can ASEAN do the same, for engineers, accountants, architects and other professions?

» For **mid-skilled** workers with vocational skills (plumbers, carpenters, legal assistants, etc.), a certification process could allow workers from one country to go to another for a job. This is already happening informally, with smartphone apps like “ServisHero.” How about formalizing it?

» For **low skilled** workers, such as construction workers, harmonized labor regulations could provide appropriate legal protections and social safety. Such protection will help the nearly 90 percent of the 7 million intra-ASEAN migrants who are low-skilled.

Third, ASEAN is prioritizing financial inclusion. Currently, only about 50 percent of adults in ASEAN have an account at a financial institution. In 2014, only 29 percent of workers in ASEAN reported receiving their monthly salaries through an account from a financial institution, while the remaining 71 percent are paid in cash by their employers. Cash payments are risky. Salary deposits directly into the accounts of workers

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at financial institutions are safer and can help workers save funds, build
credit histories, and over time access services such as consumer credit,
mortgages, education loans and insurance products. ASEAN is
discussing a specific financial inclusion target for 2020, with a goal that
70 percent of adults have savings accounts at financial institutions.

Financial inclusion will help reduce poverty further in ASEAN, directly,
and indirectly by making it easier to do business and to grow a business,
especially for small and medium sized firms, which account for the
overwhelming majority of ASEAN businesses and employment.

**Connecting ASEAN**

Fourth, ASEAN member countries have adopted the Master Plan on
ASEAN Connectivity (MPAC). Highway and rail projects are now
taking shape in the region. People can look forward to a future of
seamless transport of goods across borders. Along with improved roads,
rails, and port infrastructure, effective transport, border policies,
accompanying logistics and systems investments will be key to facilitate
smooth transport and travel across borders.

![Key Physical Connectivity Projects in ASEAN. Source: ASEAN Secretariat](image)

Many ASEAN Member Countries are reporting improvements on indices
such as Trading Across Borders, as measured by the World Bank Doing
Business Report⁸. Transport of cross-border goods remain burdensome,
with many complex domestic regulations, country-by-country insurance

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⁸ Marcelo Gordillo, Darwin; Mandri-Perrott, Xavier Cledan; House, Ruth Schuyler; Marcelo
Gordillo, Darwin. 2016. *East Asia and Pacific - Enhancing ASEAN connectivity monitoring
Enhancing-ASEAN-connectivity-monitoring-and-evaluation
requirements, import-export paperwork for vehicles, and the lack of a system for sharing advance manifest information.

Many trucks must unload and reload cargo at some border points, or go empty on their return journeys. Four different insurance instruments are required, for example, for vehicles to travel from Yangon to Da Nang, and trains must be inspected at each border. Policies to promote seamless transport might include, for example: (i) a unified insurance and vehicle registry system; (ii) sharing of advance manifest information for cargo transported via train (as happens with air plane travel); (iii) harmonized logistics and trucking standards across participating member countries.

**Working towards seamless transportation of goods across borders is key to unlock greater trade flows and integration in ASEAN.**

A single insurance and vehicle registry system for ASEAN would ease logistics, standardize screening processes and cutting down travel times. This will allow for faster transportation of goods, lower costs and increase overall efficiency.

**Climate Change**

**Finally, the adverse effects of climate change are a reality in ASEAN.** The mean temperature in the region increased by 0.1 to 0.3 degree Celsius per decade between 1951 and 2000; rainfall trends moved downward from 1960 to 2000; and sea levels have risen one to three millimeters per year\(^9\). Heat waves, droughts, floods, and cyclones have become more intense and frequent.

Climate change and natural disasters hurt the poor most. One flood can make a low-income family destitute. Effected shared early warning systems (especially for typhoons and tsunamis), allowing each ASEAN country to draw on all member countries’ “disaster intelligence” and expertise, will help. With the support of Japan and the World Bank, Cambodia, Lao PDR, and Myanmar are planning to establish SEADRIF, the Southeast Asia Disaster Risk Insurance Facility, which aims to pool risks, reduce disaster exposure, and ultimately protect the people most at risk in participating countries.

\(^9\) ASEAN Secretariat - [http://environment.asean.org/asean-working-group-on-climate-change/](http://environment.asean.org/asean-working-group-on-climate-change/)
The tropical storm “Sonca” in July 2017 led to the worst floods in the northeastern province of Sakon Nakhon, Thailand, for two decades.

Building disaster resilience will make ASEAN more inclusive and protect millions of lives.

For the last three decades, much of ASEAN has experienced strong growth and growing middle-class wealth. Member countries aim at making the ASEAN community ever more inclusive, while enjoying continued robust economic growth. Policies and programs to improve nutrition, integrate labor markets, increase financial access, provide for seamless cross-border transport connectivity, and establish effective disaster risk prevention and management—in addition to ASEAN’s core agenda to open and facilitate trade, including through transparency mechanisms such as the ASEAN Trade Repository (atr.asean.org)—will help achieve these goals.

This article is adapted from a keynote speech at the ASEAN Economic Integration Forum 2017 held in Bangkok on September 14, 2017. For more information, visit http://www.unescap.org/events/asean-economic-integration-forum-2017.

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Migration has been growing in Southeast Asia. The mismatch in the region’s supply of and demand for labor encourages workers to seek employment around the region. Migrants can earn substantially more when working abroad, with remittances benefiting their households at home and helping to reduce poverty. When migrants return home, they bring back capital, knowledge, and skills. Migrants can also help address labor market shortages, boost production and stimulate competitiveness.

Mauro Testaverde and Harry Moroz
The Labor Mobility Journey in ASEAN

ASEAN COUNTRIES supply 8 percent of the world’s migrants and host 4 percent. Intraregional migration has grown strongly during the last several decades. Indeed, Malaysia, Singapore, and Thailand have become regional migration hubs, home to 6.5 million ASEAN migrants.

Workers move throughout Southeast Asia in search of economic opportunity. Most of the migration consist of low-skilled and often undocumented migrants looking for better-paying jobs.

Through a series of agreements on subjects, including the ASEAN Economic Community (AEC)’s single regional market formed in 2015, the region has pursued an agenda of integration.

In part, because of these efforts, intraregional tariffs have declined significantly, and intraregional trade has increased from 17 percent of the region’s world trade in 1990 to about 25 percent today (OECD 2016). However, regional integration is not complete.

Figure 1: ASEAN actions to facilitate labor mobility, 1995–2015

While workers move between jobs and across sectors and even countries, to take advantage of new economic opportunities, barriers to labor mobility make such moves costly. As part of its efforts towards integration, ASEAN member states have taken steps to reduce these barriers. However, progress implementing regional commitments related to labor mobility is limited. Moreover, the AEC’s focus on high-skilled migration ignores most ASEAN migrants who are low-skilled.
Lowering barriers to mobility in ASEAN would increase the welfare gains workers that throughout ASEAN receive from economic integration. Migration has generally small, but positive, impacts on the employment and wages of workers in destination countries. Non-migrating workers benefit because outmigration tends to boost wages in sending countries. Migrant workers from countries with lower wages benefit from migration because of significant differences in wages across ASEAN countries. Family members who do not migrate benefit from remittances.

International migration can have broader positive impacts on entire economies. Most evidence from ASEAN suggests that migration has a positive impact on economic growth and in some cases migrants seem to have facilitated the upgrading of local skills.
Workers Face Significant Moving Costs

ASEAN’s economic diversity means that there are significant opportunities to migrate for work. Large intra-regional disparities in income and population aging remain. Disparities in GDP per capita adjusted for purchasing power are similarly large: in all but one of ASEAN’s 10 largest migration corridors, the GDP per capita of the destination country is at least twice that of the origin country.

However, barriers to labor mobility in the region limit the welfare gains from migration by preventing some people from moving for work and leading others to migrate informally. Informal migration is a significant issue in ASEAN, most migrants in Thailand and Malaysia are informal.

ASEAN countries that are more open to globalization and have developed more advanced migration systems tend to have lower costs of international labor mobility.

Labor mobility costs quantify the barriers that workers face when seeking to change jobs across firms, sectors, or countries. For instance, Malaysia and Singapore have the lowest international labor mobility costs in ASEAN. However, no matter where workers wish to migrate in ASEAN, they face mobility costs several times the annual average wage, suggesting that weaknesses in the migration process may make migrating for work difficult.

Figure 3: International labor mobility costs in ASEAN in the 2000s

Source: Holleweg, 2016
Systemic Issues Arise from Inefficient Migration Processes

Migration systems are generally composed of the governance system and four other components. These components work together to reconcile the sometimes-divergent needs of host and source countries, employers, and migrants.

» The governance of the migration system refers to the legal and institutional framework organizing the system, and to bilateral agreements between sending and receiving countries.

» The admissions component determines who migrates and in what numbers, through which entry paths, quantity restrictions, and recruitment. The employment component involves the terms of employment and the protection provided to workers.

» The exit component involves the return of migrant workers to their source countries, encompassing sanctions and incentives in the host country designed to punish overstaying temporary migrants and reward those who return, diaspora engagement, and reintegration policies.

» The enforcement component involves implementation of migration policy and oversight of the other components of the migration system.

Breakdowns and weaknesses in each component of the migration system increase the cost of international migration. They can be grouped into five major problem areas:

» Migration systems can have difficulty responding to economic needs when restrictions on the number of migrants to a country are not aligned with labor market requirements.

» Information asymmetries arise between migrants and employers. Migrants in ASEAN are heavily dependent on recruitment agencies and informal labor brokers to reduce these asymmetries.

» Employers and recruitment agencies are able to exploit information asymmetries to extract rents from the migration system.

» There is a lack of coordination among sending and receiving countries, as well as among these countries, employers, trade unions, workers, and migrants. Bilateral agreements that coordinate migration between ASEAN member countries often lack transparency and input from employers and migrants.

» Both sending and receiving countries tend to focus on the short-term benefits and costs of migration. Programs to support returning migrants and to connect with diaspora are in their infancy.
Lowering Mobility Costs by Fixing Migration System Issues

Labor mobility costs can be reduced by addressing breakdowns and weaknesses in each component of the migration system. Appropriate policies vary across countries, depending on whether they primarily send or receive migrants, the maturity of their migration management system, and their level of development.

**GOVERNANCE**

» **Comprehensive national migration strategies.** A national migration plan should set both short- and long-term objectives for migration, coordinating migration policy with other human capital strategies.

» **Clearly-defined institutional framework.** This helps reduce time-consuming bureaucratic procedures, thus better serving migrants.

» **Bilateral agreements.** Bilateral agreements and MOUs can facilitate cooperation between sending and receiving countries, and provide the basis to reconcile their interests and align their legislative and institutional frameworks.

**ADMISSIONS**

» **Transparent and clearly-defined entry paths.** With these, both employers and migrants are aware of the eligibility requirements and the selection criteria for entry, including differentiating entry paths in conjunction with employment terms, with entry requirements linked to employment terms. Data-driven shortage lists can identify labor market shortages, to create a feedback loop between the immigration system and the labor market.

» **Evidence-based quantity restrictions.** These should reflect economic needs and be adaptable to changing economic conditions, relying on measurable indicators that come from surveys and administrative data as well as innovative sources.

» **Improved Recruitment Oversight.** This can both reduce labor mobility costs and improve protections for migrants. Expanding access to information can reduce information asymmetries, improve matches between employers and workers while also diminishing the need for recruitment agencies.
**EMPLOYMENT**

» **Well-designed employment terms.** This includes calibration with entry paths to differentiate migrants by skill and productivity, flexible terms, and easy renewal. Receiving countries can offer better terms to highly-skilled migrants, or to reward improved productivity. Employment terms can be made more flexible, allowing foreign workers to change employers.

» **Better protections for migrant workers.** Pre-departure orientation and financial literacy programs may improve migrant workers’ employment experience abroad by expanding knowledge of their rights, of the destination country, and of the complaint mechanisms available. Sending countries could also consider providing loans to migrant workers to assist them with the cost of migration.

**EXIT**

» **Exit sanctions and incentives to encourage voluntary repatriation.** In addition to negative incentives for employers to encourage on-time return, as in Malaysia and Singapore, wages might also be withheld or deposited in a compulsory savings scheme until workers return to their source country. Positive incentives for returns also exist, such as tax rebates, guarantees of future employment, or assistance with transportation, medical examinations, and document preparation (OECD 2013).

» **Active diaspora engagement policies.** Returning migrants bring both financial and human capital resources with them. Members of the diaspora who remain abroad can be sources of learning for local experts and of financial connections to destination countries. In Malaysia, a recent impact analysis of TalentCorp Malaysia’s Returning Expert Programme found positive results. The program, which provides incentives for high-skilled Malaysians abroad to repatriate, was found to increase the probability of return by 40 percent for applicants with an existing job offer while having only a modest impact on government finances (Del Carpio et al. 2016).

» **Reintegration of returning workers.** More research into how countries can help to reintegrate workers into their labor markets is necessary. Source countries can offer reintegration benefits to returning migrants, including active labor market policies to help them to find jobs or start businesses on their return.
ENFORCEMENT

» Coordination of immigration law enforcement. This involves coordinated internal and border enforcement actions, and coordinated use of data among migration-related agencies. Labor migration agencies (which often hold data on migrant workers and employers) and border enforcement agencies (which hold data on migrant exit and entry) can leverage their data to undertake joint enforcement efforts. In low-capacity environments, coordination is even more important to ensure that limited staff and resources are leveraged to the greatest extent possible.

» Targeting of migration law enforcement. Enforcement of migration laws on employers – in addition to migrant workers – can improve compliance with immigration laws. Efforts to increase compliance with migration regulations among employers should also involve policies to reward compliance.

This write-up is a summary of Migrating to Opportunity: Overcoming Barriers to Labor Mobility in Southeast Asia; doi: 10.1596/978-1-4648-1106-7. A PDF of the final, full-length book, once published, will be available at https://openknowledge.worldbank.org/ Please use the final version of the book for citation, reproduction, and adaptation purposes.

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How exactly do unskilled immigrant workers – with at most secondary education – fit into a dialogue about national productivity growth? Such a discussion would revolve around the components of labor productivity improvements - total factor productivity (TFP) growth, a rise in the average skill level, and physical capital deepening (keeping in mind that TFP growth can be facilitated by the other two components).
There are about 245 million migrants worldwide – around 3 percent of the world population. Roughly one-fifth are tertiary educated. Middle-income countries have a smaller proportion of immigrants than high-income countries (about 1 percent versus 12 percent). But for a number of middle-income countries with more immigrants than others, there is uneasiness about relying on unskilled foreigners as they strive to leap from low-wage labor and imitation to high-skilled labor and innovation.

In a recent Research & Policy Brief (RPB), we discuss the channels through which unskilled immigrant labor affects labor productivity. We also attempt to summarize relevant empirical evidence.

Although unskilled immigrant workers have low formal human capital, they can still contribute to productivity improvements by helping the national economy become more efficient and by generating incentives for the native labor force to upgrade their skills.
Channels: How Might Unskilled Immigrant Labor Affect Productivity?

Mechanical (immediate) channels comprise (i) physical capital dilution from an overall increase in workers; and (ii) lower skills intensity following the increase in the proportion of unskilled workers. Both adversely affect labor productivity.

Dynamic channels come into play as firms and workers adjust. Positive effects could arise from:

» **Complementarity of immigrants vis-à-vis natives**, when they are heterogeneous in skills. This can spur efficiency and higher skills intensity of the native workforce through task reallocation and specialization. The increase in the supply of workers for manual jobs allows natives to focus on more complex tasks. The re-entry of high-skilled natives, namely tertiary-educated women, into the labor force is also possible when low-cost domestic household services become available.

» **Scale and agglomeration economies**, even if immigrants and natives are homogenous. An increase in labor supply can lower the cost structure of firms, supporting output expansion. This effect is particularly potent amid labor shortages and opportunities to enter new markets. Moreover, the pooling of task-specific labor can generate ideas for simple process improvements.

» **Increased competition**, which, among similar workers, may incentivize natives to perform tasks more efficiently and to upgrade their skills.

» **Directed technological change**, where firms adopt technologies and physical capital that are more suited to the efficient and intensive use of unskilled workers (i.e. possibly less “modern” but factor-supply appropriate), and which may contribute to increases in TFP.

Negative effects, on the other hand, may be triggered by:

» **Poor social cohesion** because of trust and communication barriers. Immigrant diversity has been found to have some costs in terms of cohesion, notwithstanding overall beneficial effects.

» **Physical capital-skill complementarity** whereby physical capital deepening is reduced as capital is less complementary to unskilled labor than skilled labor. This could lower TFP growth.
For a sense of net effects – positive or negative, we looked at 22 primary studies. Explicit analysis on skilled versus unskilled immigrants is rare. So, most of the econometric results pertain to the effects of total immigrants. They remain instructive, given the overwhelming direction of migrant flows from less educated to more educated countries.

Our simple tabulation suggests that overall, total immigrant effects on labor productivity are statistically insignificant to positive. Broken down to the three components of labor productivity, positive effects from total immigrants are especially apparent through TFP. There is no statistically significant impact on physical capital per worker suggesting that capital accumulation need not be adversely affected. Human capital per worker is somewhat negatively affected, indicating that immigrants’ compositional effect on skills tends to outweigh the effect on natives’ skills upgrading. In the studies that analyze labor productivity alongside all its three components, positive immigrant effects on TFP more than it offsets the effects on physical capital and human capital per worker.

Outcomes vary across countries. Positive productivity effects from total immigrants are obvious for the U.S. – analysis using state-level data links task specialization of less-educated natives, induced by unskilled immigrant inflows to TFP growth. Studies suggest that the complementarity and scale channels operate in Malaysia, but also that automation is somewhat hindered. Actual empirical evidence of net productivity effects seems mixed, and not representative enough of the economy tending to focus on the manufacturing sector. In contrast, there is also the unique example of a large influx of skilled immigrants into Israel (fleeing the collapse of the Soviet Union) not having positive effects on productivity in the manufacturing sector.

More than anything, cross-country evidence highlights that underlying the likelihood of positive net productivity effects is how immigrants link to specific gaps in the economy – regardless of skill level. And the response of agents, markets and institutions in host countries.
Reframing the Problem

The economic case for an outright ban on unskilled immigrant workers is weak. But understanding economic needs, improving immigration systems, and incentivizing behavior that benefits the economy are imperative. To be fair, anxieties in middle income countries are not misplaced. However, foreign workers form a broader conversation on overall labor skills and technologies. For instance, how do nations ensure quality human capital amid brain drain? Middle-income countries in fact have emigrants that number two times of immigrants—about 3 percent of their population. And high-skilled immigrants tend to leave a broad range of countries for a narrow selection of mainly high-income countries.

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The World Bank Group Global Knowledge and Research Hub draws from Malaysia’s development experience that can serve as valuable lessons for other countries. Vietnam and Lao PDR are just two of the countries that have benefited from this model of capacity development through knowledge exchanges with the Hub.
CAPACITY DEVELOPMENT is usually associated with training, seminars and perhaps study tours. Most of the countries the World Bank works in require a significant boost in their capability to implement policies, programs and projects. For training to be sustainable and have high impact, it should be targeted to challenges in the public sector, coupled with initiatives to improve organizational and institutional capacity.

There is now a model of capacity development via knowledge exchanges; namely, the Hub, which specializes in – and was specifically set up to engage in – bringing the Malaysia’s development experience to other countries.

This works best when the World Bank has an existing engagement in a country, so that the knowledge exchange can be tailored to an issue that the government is trying to solve. One of the key roles of the Hub is to analyze, curate, and distill the elements of Malaysia’s experience that can serve as valuable lessons for other countries.

Through the Hub, the World Bank facilitates knowledge exchanges between Malaysian government officials and their counterparts from other countries who seek to apply Malaysia’s learnings to their own circumstances. Vietnam and Lao PDR are two ASEAN member nations that have recently taken advantage of this capacity development model.

The Hub has recently completed an assessment of Malaysia’s experience with its Performance Management and Delivery Unit (PEMANDU) and is embarking on an assessment of Malaysia’s adoption of good regulatory practices.

Together with our counterparts from the Malaysian government, we headed north with the knowledge in hand in the interest of sharing these experiences with our partners with corresponding interests.
By 2035, Vietnam’s vision has it aspiring to become a prosperous, creative, equitable and democratic nation. Achieving this ambitious goal has set Vietnam on a path of transformation on multiple fronts – economic, social, and political.

At the core of this transformation is the re-orientation of the state’s economic management role.

This requires adapting Vietnam’s economic governance, so that the state becomes a skilled facilitator of three types of relationships; among government agencies, between the state and the market, and between the state and the citizens. Through the international conference on “Economic Governance for a Facilitating State,” jointly organized by the Government of Vietnam and the World Bank in Hanoi earlier in 2016, Malaysian officials shared their experiences, focusing on strengthening institutions so they can facilitate better development outcomes.

Here are some lessons that Malaysia shared with Vietnam:

» **Coordinating interactions between agencies from the Prime Minister’s Department improved policy implementation in Malaysia.** Although the National Transformation Programme (NTP) was implemented by line ministries and agencies, it was coordinated and rigorously monitored by PEMANDU. Coordination of the NTP from the center of government raised the profile of these initiatives and increased the stakes in their successes.
Malaysia’s transformation program had a manageable number of high-level priorities, which were broken down into detailed tasks. PEMANDU then helped the implementing ministries create implementation routines with deadlines, assigned responsibilities and measurable performance indicators. Ku Kok Peng, Executive Vice President of PEMANDU, emphasized the need for transformational leaders to be ruthless about prioritization and executing it through the discipline of action. Driving this process from the Prime Minister’s Department, PEMANDU relies on ministries, departments and agencies to implement the NTP, which in turn creates commitment, coordination, and collaboration among government agencies to deliver outcomes to citizens.

Malaysia’s government worked closely with business leaders to improve the regulatory environment. Malaysia enabled effective interactions between the government and businesses through the “Special Taskforce to Facilitate Business”, or PEMUDAH in Bahasa Malaysia (BM, Malaysia’s national language), which took charge of the regulatory reform. Made up of government and business captains, PEMUDAH has helped re-engineer business processes and reduce the steps required to provide licenses and business permits. Dato’ Latif Abdul Abu Seman, Deputy Director General of the Malaysia Productivity Corporation, spoke passionately at the conference about how this process has helped businesses focus on productive activities rather than spend time on filling forms.

Reforming Lao PDR’s Civil Service

The government of Lao PDR was exploring ways to improve the management of the civil service, contain its wage bill, and create a more performance-oriented civil workforce. The World Bank Governance and Macro Fiscal Management teams conducted a knowledge exchange between Malaysia and Lao PDR.

The wage bill currently represents an estimated 8.4 percent of GDP, which is significantly higher than its ASEAN peers. At the same time, public-sector employees are an estimated 2.8 percent of the population, which is well above the 1.1 percent global average for developing countries. With the current fiscal challenges, including a fiscal deficit of around 6 percent of GDP in the fiscal year 2015-2016, and a public debt increasing to around 70 percent of GDP, such a large wage bill is unlikely
to be sustainable. The World Bank is providing advice in this area through its ongoing Public Expenditure Analysis.

Over the past decades, Malaysia has instituted several reforms focused on increasing the performance orientation of its civil service. It has also introduced measures, such as early exit for civil servants, to help constrain the high wage bill.

Malaysian authorities continue to work on similar issues like those of their counterparts from Lao PDR, while having experimented with various reform measures and have gleaned valuable lessons.

To better understand the civil service reform issues in Lao PDR, the World Bank’s Malaysia-based team met with the team in Vientiane. They then worked with the Malaysian Public Service Department to identify the right officials to travel to Vientiane to share their experience with the Lao PDR Ministry of Home Affairs (MOHA) and Ministry of Finance (MOF).

The knowledge-sharing workshop took place in Vientiane with about 40 government officials actively participating. Three Malaysian officials presented Malaysia’s experience in reforming pay and compensation, job
analysis, performance appraisal, and human resource management information systems, while the World Bank team provided global references and helped moderate the workshop.

As a next step, the World Bank discussed a follow-up knowledge-exchange visit by the Malaysian officials that would go even deeper: a week of coaching where they would work with the Lao counterparts on specific issues such as developing job descriptions. Moving forward, the World Bank will now be able to discuss a more detailed plan to continue to support the government of Lao PDR on its civil service compensation and performance agenda.

The proof will ultimately be in the ability of Lao PDR to adapt these lessons to its own civil service reforms. These results will take time to materialize. However, this event was successful in that it facilitated a targeted, problem-driven knowledge exchange of the experience from Malaysia to Lao PDR.

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The Global Symposium on Microfinance “Revolutionizing Microfinance: Insight. Innovation. Inclusion”, held in May 2017 in Kuala Lumpur, was an opportunity to develop a better understanding of how microfinance institutions (MFIs) can be a part of the evolving financial services ecosystem.
FINANCIAL SERVICES for poor households has evolved from traditional microcredit – specialized service providers offering a single basic financial product – to financial inclusion. Today, both individuals and businesses can access and use multiple financial services provided by formal financial institutions. Low-income households need access to the full range of financial services to generate income, build assets, smooth consumption, and manage risks.

Today, the term “microfinance” generally refers to a broad set of financial services tailored to fit the needs of low-income individuals. This has led to a broader focus on the financial ecosystem, characterized by a multidisciplinary approach bringing together finance, technology, and development economics.

At its core, low-income people and businesses exist as financial services consumers, interacting with providers to access financial services. Multiple market functions are needed to support the core exchange between supply and demand (see Figure 1), which are performed by a range of different market actors – both public and private – motivated by their own capacities and incentives.

By incorporating the interests and incentives of clients and other key market players, and the influence of rules and supporting functions about financial service provision, the market system framework acknowledges that only by understanding the entire system can we address the constraints to – and take advantage of the opportunities of – increasing financial inclusion.

There has been a realization that one-size-fits-all solutions do not create resilience, and overlapping needs of poor farmers, entrepreneurs, and workers are gradually recognized, thus developing financial products and support services tailored to their specific needs.
The Global Symposium on Microfinance held on May 22nd and 23rd in Kuala Lumpur, provided a discussion platform on how emerging digital innovations can be harnessed to meet the needs and expectations of individuals and micro and small enterprises.

The Symposium was organized by the World Bank Group Global Knowledge and Research Hub in Kuala Lumpur in collaboration with the Central Bank of Malaysia. The forum was also the venue for the launch of the World Bank’s report on ‘Financial Inclusion in Malaysia’.
Digital technology and data allow financial service providers to more effectively serve the financially excluded with a “customer-centric” approach. Using specialized algorithms, providers can analyze information on a customer’s mobile phone and social media data to develop the credit profile of a client when they make lending decisions. These digital footprints help financial service providers interact better with customers, and provide a range of financial products and services based on a deeper understanding of their financial needs.

For microfinance institutions, the use of digital channels can mitigate cash risk and increase operational efficiency. Current microfinance lending models are cash-intensive, and this exposes the institution and customer to cash risk, such as during storage and transit, which incurs additional costs. As such, time that could have been used more productively is spent managing this risk.

Mobile banking supports new business models through mobile technology and data analytics in credit scoring, decision and underwriting processes. However, implementation has been led by mobile network operators, and to some extent large commercial banks and a small number of new cashless microfinance institutions. While traditional institutes are known for their expertise in clients’ needs, they must adapt and develop more capacity to stay competitive and relevant to take advantage of mobile banking services or those that are soon to become available in their countries. Additionally, crowdfunding can improve access to finance for unserved and underserved borrowers which creates cheaper, community-based financial products, and facilitates access to digital investments for people with limited options to receive financial returns on their savings.

There is a need for a range of different financial service providers, be it banks and non-banks (telecommunications companies or FinTechs). Just like Uber and Airbnb, which transformed the transportation and hotel industries, innovation in algorithm-based credit risk assessment, psychometrics testing and crowdfunding platforms are bound to change the financial services industry.
Building Trust

Microfinance institutions and FinTechs face similar challenges in building trust around new digital financial services, and ensuring reliable and stable service delivery takes time. The latter is often limited by poor telecommunications and energy infrastructure, especially in remote areas. Providers should establish communication channels and complaint resolution mechanisms which can address customers’ risk perceptions. Using approaches like assisted digitization (step-by-step demonstrations of processes that show transactions in passbooks or receipts) to help the client transition to digital financial services should also be considered.

Consumer Protection

Clients of new digital technologies may face new risks ranging from poor customer recourse mechanisms, fraud, data privacy and security breach, service unavailability, hidden fees, discrimination, and insolvency. It will be critical for financial service providers to meet user expectations to achieve financial inclusion.

Conclusion

An estimated two billion adults remain excluded from the formal financial system. Bridging this financial access gap will require incorporating new and diverse technologies to transcend the need for traditional brick-and-mortar service delivery.

The era of digital technologies and big data presents new opportunities to create better products that are tailored to customer needs, while addressing some of the challenges around transparency, fair treatment, and recourse.

Traditional MFIs need to adapt to rapidly changing financial services ecosystem or risk falling behind. FinTech and other financial services innovators have created low-cost commercial models that can be leveraged by financial institutions to increase operational efficiency and offer a wider array of products to low-income populations and MSMEs.
These fundamental changes to the financial services ecosystem driven by innovation and digital technologies highlight the new and uncharted risks that both regulators and providers need to acknowledge and proactively address by re-thinking policy and risk management frameworks as these are critical to reinforcing customer trust.

Even with alternative delivery channels, providers can still use face-to-face interactions with MFI staff to deepen client engagement and build relationships, due to the efficiency gains from technology. Partnerships between mobile network operators and FSPs, and between platform providers and financial institutions, demonstrate the role of building on the core competencies of each partner to provide services that can meet the needs of previously-unbanked customers.

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This article highlighted key ideas raised at the 2017 Global Symposium on Microfinance: “Revolutionizing Microfinance: Insight, Innovation, Inclusion”. For more information on the symposium, visit bit.ly/GSM2017.

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Using firm-level survey data collected by the World Bank’s Enterprise Surveys (ES), the overall level of women’s presence in Malaysia’s formal private sector is analyzed as well as its distribution across different firm-types. Malaysia’s experience is benchmarked against the average for the following comparator groups: other countries in the East Asia & Pacific (EAP) region, upper-middle-income countries and lower-middle-income countries.
Women’s Presence Among Workers in Malaysia is at Par with Upper-Middle-Income Countries

About 35 percent of all workers in Malaysia’s private sector are women. This is at par with upper-middle-income countries and higher than lower-middle-income countries, but lower than the regional average (figure 1A). Malaysia outperforms only two countries in the region - Vietnam and the Philippines where women equal 28 and 32 percent of all workers respectively. A roughly similar picture emerges when looking at the proportion of women workers on a per-firm basis (figure 1B).

Figure 1: The proportion of women workers in Malaysia’s private sector is comparable to the same in upper-middle-income economies

Figure 1A: % of all workers in the private sector that are women

<table>
<thead>
<tr>
<th>Malaysia</th>
<th>EAP</th>
<th>Upper Middle Income</th>
<th>Lower Middle Income</th>
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<tbody>
<tr>
<td>35%</td>
<td>45%</td>
<td>36%</td>
<td>10%</td>
</tr>
</tbody>
</table>

Figure 1B: % of all workers in a typical private firm that are women

<table>
<thead>
<tr>
<th>Malaysia</th>
<th>EAP</th>
<th>Upper Middle Income</th>
<th>Lower Middle Income</th>
</tr>
</thead>
<tbody>
<tr>
<td>35%</td>
<td>10%</td>
<td>35%</td>
<td>10%</td>
</tr>
</tbody>
</table>

Source: Enterprise Surveys
About 64 percent of all women workers in Malaysia are employed in large firms (100+ employees), 16 percent in medium firms (20 to 99 workers) and 20 percent in small firms (five to 19 workers). However, distribution of men workers is almost similar, implying no gender-specific bias by firm-size. Lack of gender-specific bias is also evident when looking at the firm-level average. That is, the proportion of workers that are women is roughly same for a typical small (34 percent), medium (35 percent) and large firm (35 percent) in Malaysia. The above results are also true for the comparator groups (Figure 2).

Figure 2: Large firms employ most Malaysian women workers

<table>
<thead>
<tr>
<th></th>
<th>% of all women workers in differing firm sizes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Malaysia</td>
<td>Small: 16%, Medium: 19%, Large: 64%</td>
</tr>
<tr>
<td>EAP</td>
<td>Small: 19%, Medium: 21%, Large: 62%</td>
</tr>
<tr>
<td>Upper Middle</td>
<td>Small: 21%, Medium: 30%, Large: 50%</td>
</tr>
<tr>
<td>Lower Middle</td>
<td>Small: 23%, Medium: 31%, Large: 48%</td>
</tr>
</tbody>
</table>

Source: Enterprise Surveys

By sector, most women workers in Malaysia, 61 percent, are employed in the manufacturing sector and only 14 percent in retail and 26 percent in other services sectors. The high share of manufacturing here is also observed in the comparator countries but less so than in Malaysia (Figure 3). In Malaysia, men workers are also disproportionately concentrated in the manufacturing sector but not as much as women workers. Thus, there is some bias in Malaysia among women workers relative to men workers in favor of manufacturing and to some extent, retail, and against the other services sectors. The stated bias is also observed in other countries; it is more pronounced in the EAP region but less pronounced in upper- and lower-middle-income countries.
Women as top managers of the firms may open doors for other women as employees as they are unlikely to discriminate against women job candidates (the so-called “reversing door hypothesis”). Similarly, firms that provide training to workers may be particularly attractive for women workers who often lag behind men in technical education and job experience. The ES data confirm both these hypotheses for Malaysia.

A typical Malaysian firm with a female top manager has 45 percent workers who are women compared with 30 percent for a firm with a male top manager.

Similarly, 39 percent of workers are women in a typical Malaysian firm that provides training versus only 33 percent otherwise. For the comparators, only the reversing door hypothesis is confirmed.

Globalization or export orientation has also been linked to more jobs. However, we find no such link for the case of Malaysia or the upper-middle-income group, although the EAP region and lower-middle-income countries do confirm the linkage.
Are Women Workers in Malaysia Concentrated in Low-Productivity and Stagnant Firms?

A lingering concern is that women may be concentrated in low-paying and vulnerable jobs relative to men. Is this the case for the private sector in Malaysia? The ES data show that there is no tendency for women workers in Malaysia to be disproportionately present in low-labor-productivity firms or in firms with low sales and employment growth rates. Whether women are engaged in less productive and dynamic occupations within the same firm relative to men is the subject of future research.

Malaysia Could Further Improve Women’s Employment by Making Labor Laws More Favorable Towards Women

The role of labor laws in affecting employment is discussed in detail in the literature. Here, we focus on six specific laws as compiled by the World Bank’s Women, Business and Law (WBL, 2016) project. The laws cover the following questions: Does the law mandate nondiscrimination based on gender in hiring? Is it prohibited for prospective employers to ask about family status? Is dismissal of pregnant workers prohibited? Are mothers guaranteed an equivalent position after maternity leave? Are employers required to provide break time for nursing mothers? Are parents entitled to flexible/part-time schedules? A “yes” answer to these questions implies that the law is gender-neutral or favorable to women’s employment and unfavorable otherwise.

Malaysia’s is far behind all the comparators. In Malaysia, only 17 percent of the laws (one out of six laws considered) is gender-neutral or favorable towards women. In contrast, the corresponding figure is much higher at 39 percent in EAP, 45 percent in upper-middle-income and 46 percent in the lower-middle-income group.

Malaysia may further improve women’s labor market participation by appropriate reform of some of its labor laws.
Conclusion

The article looks at various issues related to women’s employment in Malaysia’s formal private sector. Share of women among all workers in Malaysia’s private sector is comparable to that in upper-middle-income countries. Roughly consistent with men, most women workers are employed in large firms. There seems to be bias among women workers relative to men workers towards manufacturing and against other services sectors. As expected, training provided by firms and having a woman top manager is associated with a much higher share of women workers at the firm than is the case otherwise. Changes in some labor laws may help to further improve the presence of women workers.

This article is based on a more detailed Enterprise Note to be published by Enterprise Analysis Unit, DECIG, World Bank.

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In the last decade, there has been a revival of interest in industrial policies among policymakers around the world. In principle, industrial policymakers should eliminate relative distortions across sectors, resolving or taking advantage of externalities and spillovers in some sectors relative to others.
Industrial Policies or Public Goods?

ASK FINANCE ministers around the world what they are worried about, and they will likely reply “how to spur economic growth.” They all think they must do something, but the question is what exactly. In the aftermath of the economic crisis of 2008-2009, there has been a revival of interest in industrial policies as governments looked for ways to increase productivity in the face of severely constrained finance. Are industrial policies the best instrument to increase productivity? Or is investing in public goods a better use of scarce resources? Since the heydays of industrial policies in the 1960s, these questions have been hotly debated.

Industrial policies consist of targeted government interventions to promote specific economic sectors with the aim of increasing their productivity and spreading positive externalities throughout the economy. The main theoretical justification for industrial policies is the need to address market imperfections.

In an environment with full information and strong governance, the optimal design of industrial policies is in principle a simple matter:

Policymakers should invest selectively to take advantage of the externalities and spillovers that some sectors have relative to others.

In practice, however, governments face two key issues: their imperfect knowledge of existing constraints, incentives, and opportunities across the economy; and their vulnerability to corruption, manipulation, and rent-seeking. Developing countries—which tend to have weaker institutions and lower capacity to implement complex policies—may thus face greater risks when pursuing industrial policies.

Can the uncertainty about which sectors to invest in be overcome? Dani Rodrik proposes that industrial policy be viewed as a discovery process, whereby the public and private sectors collaborate to identify underlying costs and opportunities10. In a recent report11, the Inter-American Development Bank describes several instances of collaboration across

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Latin America, including the sugarcane industry in Argentina, the tourism industry in Costa Rica, and shipbuilding programs in Uruguay. This type of public-private collaboration, however, is hampered by the risk that the private sector might profit from its informational advantage and derive excessive rents by capturing government. Consider, for instance, the case of the rice industry in Costa Rica: Private involvement in the institution in charge of managing policies for the rice sector have resulted in excessive support to rice producers and a decrease in agricultural productivity. Consider also the recent experience in Tunisia\(^\text{12}\): Firms highly connected to former president Ben Ali were found to be most present in protected sectors including telecoms, automobiles, and tourism.

Governments, therefore, face a dilemma: To overcome the uncertainty that clouds the design of industrial policies, collaboration with the private sector may be necessary, but this could lead to state capture.

**Not All Industrial Policies are the Same**

Not all industrial policies are the same, however. They can vary between “vertical” policies that favor specific firms or narrow sectors and “horizontal” policies that target broad sectors by improving their business environment. The more “horizontal” these policies are, the more they approach the characteristics of public goods. Countries around the world have implemented industrial policies with varying degrees of success.

An analysis of Chilean industrial policy, for instance, describes the use of several vertical and horizontal policy instruments, though with a growing emphasis on the latter in recent years\(^\text{13}\). Horizontal industrial policies used in Chile include guarantees for loans to small enterprises, subsidies to new exports, and a program to foster innovation; while vertical industrial policies feature the creation of a semi-public entrepreneurial institution—*Fundación Chile*—and a program to attract

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foreign direct investment in technology. As is often the case with vertical industrial policies, Fundación Chile has had a few huge successes, including the development of the salmon and blueberry industries, but also many failed projects, such as the cultivation of the southern hake.

Given the risks associated with industrial policies, policymakers should consider the best match between their government capacity and the type of policy to be pursued.

Vertical policies require greater capability to both implement policies and avoid corruption than do horizontal policies. For example, while tax incentives have been widely used to attract new investment and spur economic growth, including in Singapore and Korea\(^{14}\), the cost of implementing and enforcing these policies can be particularly high\(^{15}\). Further, these implementation costs generally increase with the complexity of subsidies and taxes involved in vertical industrial policies. A committee reviewing the use of tax incentive policies in Papua New Guinea\(^{16}\), for instance, highlighted a concern about the challenges of implementing or effectively monitoring research and development and infrastructure incentives in the face of scarce administrative and technical capacity.

**Industrial Policies VS Public Goods Under Asymmetric Information**

In a recent paper, we review the debate on industrial policies. Moreover, we present an analytical framework that captures the informational problems and trade-offs that policymakers face when choosing public goods (e.g., public information, infrastructure, and law and order) or targeted industrial policies (e.g., firm or sector-specific subsidies, grants, and tax breaks). The model attempts to capture the possibility that private entrepreneurs may misrepresent information about the social value of their firms or industry in order to obtain special treatment from


the government. We explore an optimal industrial and tax policy that is robust to uncertainty about firm-specific productivity. It requires, however, substantial government capacity, as the planner must be able to set firm-specific taxes that are a function of firms’ claimed productivity. The model then explores sub-optimal but simpler policies, which are more appropriate when the planner does not have the ability to set up an elaborate tax and compliance system. In this more realistic, context, the model finds that providing public goods tends to be preferable to industry or firm-specific industrial policies.

Evidence and theory point in the same direction: When there is uncertainty regarding which firms and sectors have the greatest growth potential and when government capacity is low and subject to corruption, narrow industrial policies should be avoided in favor of interventions that benefit the majority of firms and induce competition.

When the pressure to do something for growth is acute and mounting, more public goods and less preferential treatment are best.

This article was first published on the Brookings Institution blog, which draws from “Industrial Policies vs Public Goods under Asymmetric Information” by Constantino Hevia, Norman Loayza, and Claudia Meza-Cuadra (World Bank Policy Research Working Paper No. 6628). To download the paper, visit bit.ly/WB_asymmetry.

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Assessments of uncertainty embedded in forecasts are often missing. Accounting for this uncertainty around baseline predictions, particularly in policy-making and investment, is critical in making better and more informed decisions. Here, a procedure to assess risks associated with an economic or social random variable is introduced. The procedure relies on a Bayesian information-theoretical approach, which allows the inclusion of judgment and forecaster expertise.
The Bayesian Way

REGARDLESS OF the field, forecasts are widely used and yet assessments of the embedded uncertainty—the magnitude of the downside and upside risks of the prediction itself—are often missing.

Particularly in the areas of policy-making and investment, the relationship between informed decisions and knowledge about foreseen risks remains central. The lack of suitable predictive models and rudimentary rules of thumb leaves policy-makers and investors making decisions without proper knowledge of risks associated with a random phenomenon.

Especially in economics, the construction of proper predictive models should be of top priority before a policy or investment assessment is generated. If a model is not able to predict outcomes reliably, it should not be used as a policy benchmark.

A density forecast is a risk management tool that helps depict and quantify risks, expected returns, or measures related to the risks associated with the forecasted variable. For policy-making purposes, the density forecasts help contextualize the risks associated with a policy variable and its outcomes.

To construct reliable density forecasts, a Bayesian information-theoretical method that can be used is introduced here. The construction of reliable forecasts is done using a combination of ex-post and ex-ante information, for which the introduced method quantifies and evaluates the embedded uncertainty in density predictions. The procedure includes decompositions of ex-ante variance and skewness of the predicted random variable. The ex-ante variance and skewness are decomposed in risk factor shares. These variance and skewness decompositions highlight the importance of ex-ante risk factor behaviors in shaping the density forecasts.

Under a noisy informational framework, the introduced Bayesian methodology adopts the Kullback-Leibler/relative-entropy function. Ex-post (actual) and ex-ante (estimated) information could come with measurement errors and other types of irregularities; hence, the Bayesian entropy method relies on a principle that optimizes the noise around the
predictions as information becomes available. As a Bayesian procedure, it is desirable to incorporate prior information to improve the accuracy of generated density forecasts.

While established forecasting systems should be revised to enhance the quality of predictions, it means nothing if there are no transparent mechanisms to evaluate the forecasts’ reliability.

Elicited density forecasts are evaluated here via scoring rules, which are statistics that quantifies, in ex-post manner, released forecasts’ accuracy. A scoring rule is defined as a numerical ranking, based on the predictive probability distribution and the materialized event. Proper scoring rules provide forecasters an incentive to elicit their best, most accurate predictions. Transparent scoring rule frameworks are encouraged to distinguish forecasting skill heterogeneity. Further, sequential compilation of scoring rule outcomes will allow future forecast enhancements.

The objective of a proper scoring rule framework is twofold: to evaluate the density forecast, and to incentivize the generation of better predictions. In terms of evaluation, the scoring rule measures the quality of elicited density forecasts. It also rewards the forecaster for his or her probability predictions, and ranks density forecast outcomes. From the perspective of forecast generation, a scoring rule has two purposes: to encourage forecasters to make careful assessments, and to ensure that forecasters retain their honesty during the process.

Although a few institutions and companies have achieved some progress in generating probabilistic forecasts, they are still scarce and – when available – are not clearly evaluated. Some central banks and financial institutions have implemented predictive densities to assess inflation, GDP growth, market volatility, exchange rates, etc. Examples include the International Monetary Fund, Bank of England, the Reserve Bank of India, and the European Central Bank, among others.

Information extracted from surveys on expectation and implied statistics of forecasting models can be useful in assessing the uncertainty in predictive density forecasts. While the use of ex-ante information is becoming more common to predict uncertainty, there is still some disagreement regarding its predictive power.
The Bayesian framework allows the incorporation of subjective and prior information on some parameters and statistics.

It is known that forecasters disagree in beliefs and in assigning prior distributions. On that account, the methodology is flexible, to exploit these differences in beliefs. Predictive densities need to be evaluated; otherwise, the forecast exercise becomes meaningless and unreliable. The prequential forecasting system framework is combined with statistical “proper scoring rules” to assess the dynamic performance of the Bayesian entropy-generated density forecasts.

As an alternative to proper scoring rules, the quality, evaluation, and improvement of density forecasts can be assessed through probabilistic forecast calibration procedures. Although calibration and scoring rules are complementary procedures in assessing the quality of forecasts, the scoring rule framework still allows the forecasters to be rewarded for their probability predictions, and can be used to directly rank forecasters or forecasting systems.

The Bayesian Advantage

Here, the Bayesian entropy (BEN) procedure is introduced and used empirically to generate density forecasts for solving an information-theoretical problem. The methodology relies on prior information of parameters and unobserved statistics, expectations of risk factors statistics, and a two-piece normal distribution assumption. The application generates density forecasts of world GDP growth associating selected risk factors: term spreads, absolute deviations of headline inflation targets, energy prices, and the S&P 500 index prices.

There are two key advantages of using the BEN procedure. First, prior information of the underlying unknown and unobserved parameters – or latent variables – can be incorporated to help the system find less noisy levels of information. Second, the Bayesian entropy procedure recovers and processes information when the underlying sampling model is partly or incorrectly known, and the data is limited, partial or incomplete.

In the empirical application of predicting world GDP growth, the associated ex-ante market information emerged from term spreads, absolute deviations of inflation targets, energy prices, and the S&P 500 index prices. The recovered posterior series of the global GDP growth variance and skewness were used to construct hypothetical BEN-
generated density forecasts. These world GDP growth BEN-generated forecasts are monthly-elicited across the period of October 2005–August 2015 (See Figure 1). They were evaluated via the continuous ranked probability score (CRPS), a proper scoring rule that measures the reliability of the resulting forecasts. The unweighted and weighted average CRPS scores show that the Bayesian entropy fan charts outperform the naïve density forecasts, which are generated by a rule of thumb using historical forecast error information and symmetric normal distribution assumptions.

Figure 1: World GDP Density Forecast and Skewness Decomposition

Density Forecast: August 2015 Prediction

Balance of Skewness: August 2015 Prediction

Source: Author
Noticeably, the estimated monthly BEN-generated density forecasts for world GDP growth show predominantly negative values of skewness – downside skewed density forecasts – across the time span of October 2005–August 2015. This spotlights two aspects of the model: its easiness to incorporate prior information such as historical overprediction of world GDP growth, and its ability to minimize noise under the relative entropy setup.

**Conclusion**

Informed decisions are required to consider potential upside and downside outcomes. For policy-making and investment purposes, predictive models that consider the modeling of asymmetric density forecasts provide superior reliability and decision-making advantage. In addition, the generation of forecasting procedures that allow the incorporation and updating of prior information is encouraged to obtain more flexible models to enhance the reliability of elicited density forecasts. Revision of established prequential systems is important in practice to enhance forecast scores. The proper scoring rule framework is also encouraged to transparently track the reliability of the predictions.

Assigning proper scores, such as the CRPS, provides strong incentives for the forecaster to elicit his or her best and honest density predictions. Evaluation of density forecasts through proper scoring rules brings transparency and the opportunity to distinguish the heterogeneity of forecasting model accuracy and forecaster skill.

The recording of scoring rule rankings will allow the comparison of future predictions: forecasters and methods. This compilation of scores will help incentivize forecasting improvements.


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