



THE COST OF CONFLICT FOR CHILDREN

FIVE YEARS OF THE SYRIA CRISIS

March 2016

FOREWORD

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This report was co-written by Frontier Economics and World Vision International. Frontier Economics undertook the original economic research for and within this report. World Vision International engaged Frontier Economics as experts in economic analysis to assess the cost of the Syria conflict on Syria and its neighbours. World Vision International worked with Frontier Economics to develop the economic analysis into a broader narrative.

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Front cover photo: Syrian children, Abd Al Kader (4) and Mona (2), stand outside their tent in Lebanon's Bekaa Valley after the first snowfall of the season.

Black barrel bombs, black bodies, a black helicopter gunship. When six-year-old Heba draws, the only colours she uses are black and red. Ibrahim tells me, as he draws, 'When I think of Syria, I only see black.'

As the conflict in Syria enters its sixth year, I – like everyone confronting the persistent horror of this conflict – strive to find a new way to cut through the complacency that keeps us from delivering the only solution that matters to children: peace.

Sometimes, I tell the stories of individual children, like Heba and Ibrahim – surviving, but scarred – to bring home the stories of thousands more just like them. Sometimes I tell the story of Aylan, whose limp body on a Turkish beach jolted us into action around the thousands of Syrian children risking their lives to flee five years of war.

Other times I share the horrifying numbers. At least 8.2 million children are now affected by conflict across the region. Between 11,000 and 19,000 children have been killed, mostly by explosive weapons. In the first half of 2015, over 650 grave violations against children were documented, nearly three-quarters of which were killing and maiming. An estimated 86,000 children aged 6 months to 59 months are acutely malnourished.

And still other times I struggle to bring the numbers and the stories together – knowing that each child being counted has a unique story of what the conflict has cost. Lost fathers, mothers, brothers, sisters, friends. Lost homes, toys, dreams. Lost education. There is no meaningful way to measure these losses.

But we can measure the economic losses, a measure that gives us some insight into what life might have looked like for these children if there had been no war. This report – a collaboration between Frontier Economics and World Vision – shows

that the conflict has cost Syria alone an estimated US\$275 billion. Even if we achieved peace tomorrow, it would cost Syria nearly half a trillion dollars more. If it takes another five years to achieve peace, nearly three times that amount will have been lost. We can't afford this. Syria can't afford this. Syria's children can't afford this.

This is lost money. It will never be recovered, never be spent to provide education, health care, safe environments, livelihoods or a future for children. Every day the conflict continues, it deepens the deprivation of Syria's children today and into the future. And yet, while we and they can't afford not to have peace, sadly, we still seem to be able to afford war.

Five years on, appeals for humanitarian aid remain chronically and substantially underfunded, despite the pledges and the seemingly limitless budgets available to fund and fuel the conflict. While military funding appears to flow seamlessly in response to operational need, humanitarian funding struggles to keep up with humanitarian need. Not only is this contradiction appalling, but it is short-sighted and, our report shows, illogical. Investing in conflict and failing to invest adequately in peace has come at a cost that will deepen the economic abyss that Syria will have to climb out of when peace finally comes.

But worst of all, it comes at the cost of more Syrian children dead, hurt and suffering in Syria and beyond.

This new research by World Vision and Frontier Economics gives us one more reason and one more way to count the cost of the conflict for children in Syria. My prayer is that it will be the last.



Conny Lenneberg
Regional Leader, Middle East and Eastern Europe – World Vision International

“ This is lost money. It will never be recovered, never be spent to provide education, health care, safe environments, livelihoods or a future for children.”

CONTENTS

| | | |
|---------------------------|---|-----------|
| I | SUMMARY | I |
| 1.1 | THE COST OF CONFLICT FOR SYRIA | 1 |
| 1.2 | THE COST OF CONFLICT FOR THE REGION | 1 |
| 2 | RECOMMENDATIONS | 3 |
| 2.1 | INVEST IN THE FUTURE OF CHILDREN IN SYRIA AND THE REGION | 3 |
| 2.2 | PROTECT CHILDREN AND FAMILIES CAUGHT IN THE CONFLICT | 4 |
| 2.3 | PROTECT CHILDREN AND FAMILIES FLEEING THE CONFLICT | 4 |
| 2.4 | MAKE ALL EFFORTS TO BRING A SWIFT RESOLUTION TO THE CONFLICT | 4 |
| 3 | INTRODUCTION | 5 |
| 3.1 | CRISIS CONTEXT | 5 |
| 3.2 | REPORT PURPOSE | 6 |
| 4 | ESTIMATING GROWTH IMPACTS OF THE CONFLICT | 9 |
| 4.1 | METHODOLOGY | 9 |
| 4.2 | OVERVIEW OF RESULTS FOR THE FOUR COUNTRIES | 10 |
| 4.3 | DISCUSSION OF COUNTRY-SPECIFIC EFFECTS | 22 |
| 5 | FINANCIAL COSTS | 27 |
| 5.1 | SYRIA | 27 |
| 5.2 | NEIGHBOURING COUNTRIES | 28 |
| 6 | WIDER ECONOMIC AND SOCIAL COSTS | 32 |
| 6.1 | SYRIA | 33 |
| 6.2 | NEIGHBOURING COUNTRIES | 34 |
| 7 | TECHNICAL ANNEX | 40 |
| 7.1 | GENERAL APPROACH | 40 |
| 7.2 | MODEL REFINEMENTS | 42 |
| 7.3 | NOTE ON DATA SOURCES | 44 |
| FIGURES AND TABLES | | |
| FIGURE 1. | SYRIA: COMPARISON OF ACTUAL AND BENCHMARK GROWTH RATES DURING CONFLICT PERIOD | 12 |
| FIGURE 2. | LEBANON: COMPARISON OF ACTUAL AND BENCHMARK GROWTH RATES DURING CONFLICT PERIOD | 13 |
| FIGURE 3. | JORDAN: COMPARISON OF ACTUAL AND BENCHMARK GROWTH RATES DURING CONFLICT PERIOD | 14 |
| FIGURE 4. | TURKEY: COMPARISON OF ACTUAL AND BENCHMARK GROWTH RATES DURING CONFLICT PERIOD | 15 |
| FIGURE 5. | COMPARISON OF ACTUAL AND BENCHMARK LEVELS OF GDP PER CAPITA DURING THE CONFLICT PERIOD | 17 |
| FIGURE 6. | OVERALL IMPACTS ON 2015 GDP PER CAPITA | 18 |
| FIGURE 7. | CUMULATIVE IMPACTS FROM 2011 | 19 |
| FIGURE 8. | SYRIA: CATCH-UP IN TOTAL GDP UNDER DIFFERENT SCENARIOS | 20 |
| FIGURE 9. | COMPARISON OF WDI AND TED DATA SOURCES FOR SYRIAN GDP | 45 |
| TABLE 1. | SUMMARY OF ESTIMATED IMPACTS OF THE CONFLICT AS AT END 2015 | 11 |
| TABLE 2. | FUTURE COSTS OF CONFLICT UNDER DIFFERENT CONFLICT SCENARIOS (USD BILLIONS) | 21 |
| TABLE 3. | PER CAPITA GROWTH RATES REQUIRED FOR CONVERGENCE IN PER CAPITA TERMS (2 PER CENT BASELINE GROWTH RATE ASSUMED) | 22 |
| TABLE 4. | BASIC MODEL – IMPACT OF VARIABLES ON GDP PER CAPITA | 41 |
| TABLE 5. | COUNTRY IMPACTS UNDER DIFFERENT MODEL SPECIFICATIONS | 43 |

I. SUMMARY

I.1 THE COST OF CONFLICT FOR SYRIA

- The cost of conflict to Syria to date is an estimated US\$275 billion – money which through lost growth opportunities will never be available to provide education, health and futures to Syrian children. Real GDP per capita is around 45 per cent lower than it would have been in the absence of conflict. It is nearly one and one-half times the budget of the UK's National Health Service for 2015–16 and roughly the combined annual investment by France and Germany in public education. It is approximately the annual gross domestic product (GDP) of Portugal in 2014.
- Direct and indirect impacts on education services resulted in the equivalent of 24.5 million years of lost schooling by the end of 2015. With one in every four schools damaged, destroyed or used to shelter displaced people, about 5.7 million children inside Syria are in need of education assistance. There were 400,000 more children out of school in 2015 than 2014.
- Estimated life expectancy at birth has dropped by 15 years during the five-year span of the conflict. Attacks on hospitals have left only 43 per cent of Syrian hospitals functional, whilst half the total number of certified doctors have fled the country. Millions of children under 5 are now more vulnerable than ever to physical trauma, injuries, communicable diseases and malnutrition.
- The current cost to Syria of US\$275 billion in terms of lost growth is about 150 times the Syrian health budget prior to conflict taking hold in 2011.
- Even if the conflict ends this year, the cost of the conflict will grow to between US\$448 and US\$689 billion in terms of lost growth. This is 140 times the amount currently requested by UN agencies and partners to meet humanitarian needs inside Syria and almost 100 times the amount to meet Syrian refugee needs across the region. This is the most optimistic scenario, where economic growth is assumed to allow Syria to recover its shortfall in GDP per capita within 10 to 15 years.
- The cost of conflict will amount to US\$1.3 trillion under the assumption that conflict continues until 2020, and that it will require 15 years to eliminate the growth difference. Under this more pessimistic assumption, the cost is nearly the current annual GDP of Spain. Allowing the conflict to continue for another four years, the difference between the pessimistic and the optimistic scenarios, will cost around US\$852 billion – more than the economy of the Netherlands.

I.2 THE COST OF CONFLICT FOR THE REGION

- Lebanon has been the most affected by the Syrian conflict. Real GDP per capita is nearly 23 per cent lower than it would have been in the absence of the Syrian conflict.
- The impacts on Jordan are less severe, but nevertheless significant. While Jordan has suffered from adverse trade effects, it has also benefitted from an inflow of Syrian capital.

- Turkey has fared comparatively better than its neighbours. Estimated effects of the conflict on GDP per capita range from slight to moderately positive. This result reflects a number of factors, notably, the size of the Turkish economy, its strong integration with the European Union and some positive effects of the conflict, including more labour and capital arriving in Turkey. Turkey has spent over 7 billion Euro (around US\$7.8 billion) of its own money on supporting the Syrian refugee community since the start of the conflict.
- For Lebanon and Jordan, loss of overall GDP has been more modest compared to the per capita losses. This highlights the effect of the influx of refugees on living standards. Pressure on basic services such as public schools and hospitals has reduced the overall quality of care for all vulnerable groups, including host communities. Limited support to meet health care needs in particular has resulted in increased morbidity and mortality, especially among children under 5. This could be

managed by providing refugees with means to engage in productive activities in host countries.

- Families are under acute financial pressure, with 90 per cent of refugees in Lebanon and Jordan considered poor. Previously barred from formal employment, parents are sending their children to work or entering them into marriage at a young age just to help the family survive, making children less likely to return to school. Only 48 per cent of refugee children from Syria are able to access education opportunities.
- At least 8.2 million children inside Syria and across the region are now experiencing displacement, interrupted schooling, broken health systems, food insecurity and limited protection from serious harm and abuse. Without the means for these children to receive support, rebuild their lives and gain essential skills, conditions are being created that will transmit poverty across generations, fuel social instability and undermine prospects for recovery.

Eight-year-old Ibrahim works long hours on agricultural land in Lebanon's Bekaa Valley to help support his family.



2. RECOMMENDATIONS

2.1 INVEST IN THE FUTURE OF CHILDREN IN SYRIA AND THE REGION

Donor governments must:

- Swiftly and fully translate pledges made at the 2016 London Conference¹ to committed funding for the 2016 Syria Humanitarian Response Plan and the 2016–17 Regional Refugee and Resilience Plan. In order to ensure full transparency, accountability and implementation, donors should demonstrate that the historic pledges of nearly US\$11 billion made at the 2016 London Conference constitute new contributions, not contributions previously made or promised.
- Fully fund education plans developed by host countries and agencies responding to the crisis in Syria, aiming to have all Syrian children in school and with access to quality education by the 2016–17 school year. The minimum funding requirement from donors is US\$1.4 billion per year – or the equivalent of US\$1 per child per day – covering 3.8 million children, including all out-of-school Syrian refugee children, vulnerable children in host communities and children still inside Syria.
- Ensure that commitments to invest in the resilience of affected communities are further detailed, and a strategy and timeline developed for reconstruction in line with the ongoing peace process to start as quickly as possible once

It is already clear that immediate improvements must be made to protect all civilians in Syria, especially children, by ending violations of international human rights and humanitarian law, including killing, maiming, and making attacks against schools or hospitals. It is also clear that refugees urgently need improved access to income opportunities to prevent sliding further into poverty. But these immediate measures are not enough. Nor is simply the cessation of the conflict.

To reverse the economic cost of conflict on Syria and the region, a large-scale reconstruction and long-term investment plan is required. In the short term, refugee host countries must fulfil recent commitments to enable local workers and refugees to access better opportunities in the formal economy and labour markets. In the long term, the social and physical infrastructure of Syria and of the region must be restored in order to lay a foundation upon which the future generation can rebuild.

The international community must act now to end the conflict and plan for recovery to remove the long shadow already cast over the lives of Syrian children.

a political settlement has been achieved. Development grants must be prioritised over loans, with capacity building for local Syrian civil society and implementing agencies prioritised within donor plans. Reconstruction and development efforts are central to ensuring Syria's ability to sustain economic growth and corresponding living standards.

The governments of Lebanon, Jordan and Turkey must:

- Allow those fleeing the conflict in Syria to seek safety and protection by keeping their borders open, respecting the right to freedom of movement, adhere to the principle of non-refoulement, and ensure that those displaced people seeking protection are able to access registration and legally stay.
- Implement commitments to removing barriers to livelihood opportunities detailed in compacts produced during the 2016 London Conference and make these opportunities available to all eligible parties in each country, with the full financial support of the international community.

The international community must:

- Fully support Lebanon, Jordan and Turkey compacts and expand stock of capital through investment, including in infrastructure, to enhance the skills of local workers and to strengthen the ability of refugees to access the formal economy, recognising these plans as a landmark in supporting the current and future economic viability of affected communities.

¹ On 4 February 2016, the UK, Germany, Kuwait, Norway and the United Nations co-hosted a conference on the Syria crisis in London to raise significant new funding to meet the immediate and longer-term needs of those affected. The Supporting Syria and the Region conference brought together world leaders from around the globe and raised over US\$11 billion in pledges – US\$5.8 billion for 2016 and a further US\$5.4 billion for 2017–20 to enable partners to plan ahead.

2.2 PROTECT CHILDREN AND FAMILIES CAUGHT IN THE CONFLICT

Parties to the conflict must:

- Abide by international human rights law and international humanitarian law.
- Immediately end grave abuses of children's rights, including ending the killing and maiming of children and attacks against schools or hospitals.
- End all diversion of aid and attacks on aid workers and humanitarian convoys, and investigate and take appropriate action where these attacks have taken place.
- Facilitate the safe, unfettered and effective access of impartial aid agencies to all parts of Syria, in order to respond to the humanitarian needs of all civilians affected by the conflict.

The UN Security Council and the international community must:

- Ensure that the provision of life-saving humanitarian assistance inside Syria and in those countries hosting refugees is provided based on need and without bias.
- Take immediate steps to hold accountable those responsible for breaches of international human rights law and international humanitarian law, in particular where these concern children or the safety and security of humanitarian aid workers.
- Fund and continue to encourage UN agencies and NGOs to significantly scale up protection activities inside Syria.

2.3 PROTECT CHILDREN AND FAMILIES FLEEING THE CONFLICT

The UN Security Council and host governments in Europe must:

- Work with humanitarian actors, including UN agencies, civil society and national governments to put in place a protection mechanism across migration routes to and through Europe for unaccompanied children to ensure their protection from exploitation and abuse.

Governments hosting displaced people must:

- Significantly scale up resettlement and alternative humanitarian admissions programmes or other options in order to protect all who flee conflict and, in particular, to accommodate children and their families. Wealthy countries must move swiftly to allow more refugees better access to protection outside the region in 2016.

2.4 MAKE ALL EFFORTS TO BRING A SWIFT RESOLUTION TO THE CONFLICT

Parties to the conflict must:

- Immediately put an end to the fighting and enter into meaningful, inclusive peace talks, without preconditions, that respect the rights and aspirations of the Syrian people, in line with the 2012 Geneva Communiqué and the Vienna Statements.

The UN Security Council and the International Syria Support Group must:

- Immediately facilitate the full implementation of UN Security Council Resolution 2254 and ensure political support for the efforts of Staffan de Mistura, UN Special Envoy for Syria,

to convene formal negotiations on a political transition process as well as take immediate steps to secure the full support of all parties to the conflict to reach a long-lasting nationwide ceasefire of hostilities in Syria.

Special Envoy de Mistura must:

- Ensure inclusion of civil society, in particular women, children, youth and faith leaders, in the peace process and in the attempts to reach a long-lasting nationwide ceasefire of hostilities, in order to ensure just, sustainable and inclusive outcomes.

“This vicious cycle of death and destruction risks being seen as the new normal in Syria. But death, suffering, wanton destruction and disregard for the law should never be seen as normal. We call on all influential governments... to do more to persuade warring parties to fulfil their basic legal obligations.”

– Stephen O'Brien,
UN Under Secretary
General and Emergency
Relief Coordinator

3. INTRODUCTION

3.1 CRISIS CONTEXT

Since it erupted in March 2011, the conflict in Syria has had a devastating effect on Syria's population. The conflict has resulted in at least 250,000 deaths, with some independent Syrian organisations citing upwards of 450,000 at the start of 2016² – between 11,000 and 19,000 were children^{3,4}. A conflict marked by a total disregard for international humanitarian law by all parties to the conflict, incidents of unlawful killing, torture, targeting of civilian areas such as schools and hospitals, restriction of aid and access have increasingly become the norm during the five-year span of the crisis.

The conflict has left an estimated 13.5 million people, including over 6 million children, in need of humanitarian assistance and protection inside Syria alone.⁵ Inside Syria, all grave violations against children are being committed, with the main cause of death being explosive weapons.⁶ In the first half of 2015, over 650 grave violations against children were documented, with killing and maiming representing over 72 per cent of the documented cases.⁷

For those who have managed to flee, the official number of refugees seeking protection in neighbouring countries as of February 2016 was over 4.7 million people according to UNHCR sources: over

2.6 million registered in Turkey, over 1 million in Lebanon and approximately 0.6 million in Jordan.⁸ Half of the refugee population comprises children, meaning that over 2 million Syrian children are growing up as refugees. In total at least 8.2 million children inside Syria and across the region are now experiencing displacement, interrupted schooling, broken health systems, food insecurity and limited protection from serious harm and abuse.⁹

The increased strain on services in the region of hosting this number of refugees has led to worsening living conditions for Syrian refugees and hosting communities alike. While the direct and immediate effects of the conflict on the Syrian population are profound, the conflict has had an equally severe and potentially long-term impact on economic activity inside and for neighbouring countries.

This deterioration of conditions inside Syria and in neighbouring countries resulted in 2015 seeing the highest numbers of Syrian refugees undertaking risky journeys towards Europe.¹⁰ Just over 10 per cent of those who have fled the conflict since its beginning have sought safety in Europe, with 813,599 asylum applications made between April 2011 and April 2015.¹¹

Children are affected by armed conflict in many different ways. In order to advance the goal of protecting children during armed conflict and ending the impunity of perpetrators, the United Nations Security Council identified six categories of violations – the so-called six grave violations:

- killing and maiming of children
- recruitment or use of children as soldiers
- sexual violence against children
- attacks against schools or hospitals
- denial of humanitarian access for children
- abduction of children.

2 Syrian Centre for Policy Research, *Confronting Fragmentation* (2016), 62, <http://scpr-syria.org/publications/policyreports/confronting-fragmentation/>.

3 Oxford Research Group, *Stolen Futures: The Hidden Toll of Child Casualties in Syria* (2013), 1, <http://www.oxfordresearchgroup.org.uk/sites/default/files/Stolen%20Futures.pdf>.

4 Syrian Network for Human Rights, *Children of Syria... The Drowned Hope* (November 2015), 1.

5 UN OCHA, *2016 Humanitarian Needs Overview: Syrian Arab Republic* (October 2015), 4, http://reliefweb.int/sites/reliefweb.int/files/resources/2016_hno_syrian_arab_republic.pdf.

6 Oxford Research Group, *Stolen Futures*.

7 UN OCHA, *2016 Humanitarian Needs Overview: Syrian Arab Republic* (October 2015), 7.

8 UNHCR, *Syria Regional Refugee Response* (January 2015), <http://data.unhcr.org/syrianrefugees/regional.php>.

9 UNHCR, *Syria Regional Refugee Response*.

10 Joint Agency Briefing Paper, *Right to a Future: Empowering Refugees from Syria and Host Governments to Face a Long-Term Crisis* (November 2015), 2.

11 UNHCR, 'Europe: Syrian Asylum Applications', *Syria Regional Refugee Response* (January 2015), <http://data.unhcr.org/syrianrefugees/asylum.php>.



Ali, aged 13, is missing out on school. He sells tissues on the street in Lebanon to help support his family.

3.2 REPORT PURPOSE

The purpose of this report is to provide an estimate of the economic and social costs of the conflict on Syria and, via its spillover effects, on Lebanon, Jordan and Turkey. This report begins by providing an estimate of the cost of the conflict from its beginning to January 2016. It then provides estimates on the future effects of the cost of conflict.

The dire economic effects of the conflict, even if it stops tomorrow, will continue well beyond the implementation of a peaceful resolution. This is because the cost of conflict will continue to accumulate for as long as actual levels of GDP remain below what they would have been in the absence of conflict.

Investment is the key to stemming the continuation of the costs associated with the conflict once there is a peaceful

resolution. Theories of economic growth and of growth in post-conflict scenarios predict that once conflict has ceased, an economy should recover to close the gap that has developed due to conflict. However, both the extent and speed of recovery in post-conflict Syria will depend on a suitable enabling environment for the resumption of growth-inducing activities, notably investment.

This report presents both the present costs of the conflict and their impact on future growth prospects:¹²

- **Foregone economic growth as a result of the conflict:** In each year of the conflict growth is likely to be lower than if conflict were absent. This occurs through a combination of effects, notably the destruction of the productive capacity of economies, the

“ I sell tissues every day. My father is sick, he can't work. I used to play and go to school back in Syria. Help us get out of here so that we can go someplace where we can learn.”

– Ali, aged 13, (pictured above) Bekaa Valley, Lebanon.

¹² This report was co-written by Frontier Economics and World Vision. Frontier Economics undertook the original economic research for and within this report. World Vision International engaged Frontier Economics as experts in economic analysis to assess the cost of the Syria conflict on Syria and its neighbours. World Vision International worked with Frontier Economics to develop the economic analysis into a broader narrative.

¹³ See Paul Collier, 'On the Economic Consequences of Civil War', *Oxford Economic Papers* 51 (1999): 168–83.

disruption of investment plans and the diversion of resources from productive activities to non-productive activities.¹³ Foregone growth in economic output represents lost development opportunities. It has real consequences for children, given the relationship between poverty, in its various dimensions, and economic growth.

- **The direct financial costs of conflict:** These include outlays on military and security, humanitarian assistance and public services expansion to accommodate refugees; these outlays increase significantly during conflict.
- **The indirect costs of conflict:** Conflict-related public spending is likely to divert government resources away from long-term investment in areas of crucial social impact such as education, health care and infrastructure. This diversion has an effect on the present and future well-being of society, particularly on the most vulnerable. Crucially, it reduces the long-term development potential

of a country, given the importance of these sectors as determinants of future growth and the well-being of children as the future work force.

- **Wider economic and social costs, in particular in health and education:** The conflict has a direct effect on the health and educational attainment of the Syrian people, especially children. It also has an indirect effect on neighbouring countries as the flow of refugees puts additional stress on their health and education services. This kind of deterioration of human capital is likely to inflict long-term damage on productivity inside Syria as well as the wider region, further limiting the potential for future economic growth.

“ The parties to the conflict have so far, over and over again, eluded their responsibility to stop the war... While efforts to bring peace hopefully continue, we must not fail in our responsibility to help and protect. This is a global responsibility and today we have that opportunity.”

– Filippo Grandi, UN Refugee Agency High Commissioner



This World Vision mobile health clinic in northern Syria moves door-to-door to reach families who are unable to access health care services diminished by conflict.

'People look at you as a second-class citizen because you are a refugee'

Jara, a 23-year-old Syrian refugee, fled with her family to Lebanon from Syria almost three years ago. Her husband travelled from Lebanon to the Netherlands and later to Germany in November 2015. Jara's husband left in search of a better life for the family. In Lebanon they had no decent living conditions or legal access to employment and health care.

Many Syrian refugees work in Lebanon in difficult conditions for up to 12 to 13 hours a day, earning as little as US\$10. Jara and her husband felt they were being taken advantage of. 'Syrians, like all other people, have to work in order to provide for the family, but a lot of us do not have a choice but to accept the bad conditions.'

With no money to pay for services, and unable to follow the procedures required for Syrian refugees to access health care, Jara became desperate when her eldest son, Hamza, 30 months of age, developed severe diarrhoea. After being refused treatment in the hospital because she could not produce the correct documents or payment, Jara carried her son into the examination room and told the doctor that she was not leaving until he was treated.

Jara and her two sons, Hamza and Ibrahim, 10 months of age, took an arduous, 10-day journey by land and sea from Lebanon to Turkey and then to Europe. 'The hardest part was crossing the sea. All the passengers were wet and cold. Children were scared, shivering and crying in the boat, which carried many more people than it should,' says Jara.

'People look at you as a second-class citizen because you are a refugee,' says Jara. While travelling with her children from Lebanon to Germany to reunite with her husband, Jara met World Vision staff in a child-friendly space, offering basic services, including food and hygiene supplies, to refugees.

Ibrahim, 10 months (left) and Hamza, 2 - and - a - half, sit by the heater in a World Vision child friendly space near the Croatian border.



4. ESTIMATING GROWTH IMPACTS OF THE CONFLICT

4.1 METHODOLOGY

This report discusses the impact of the Syria conflict on the following countries: Syria, Turkey, Lebanon and Jordan. As already observed, measuring the cost of conflict requires comparing economic performance under conflict with a counterfactual scenario in which conflict is absent. The counterfactual scenario (economic performance in a conflict-free situation) is, of necessity, not directly observable and needs to be inferred.

A variety of methodologies can be employed to undertake the counterfactual analysis. Recent research by the World Bank uses a computable general equilibrium model to measure the growth effects of the conflict.¹⁴ For this report, econometric techniques are used to calculate a benchmark rate of growth in real per capita GDP for the countries concerned that represents conflict-free economic performance. The calculated benchmark is then compared to actual economic performance. The use of econometric techniques is consistent with a significant body of research into the impacts of conflict.¹⁵

The counterfactual benchmark growth rate is derived using cross-country regression analysis. A panel of over 120 countries is used to estimate the relationship between rates of

growth and specific characteristics (GDP, sector mix, savings rate, literacy rate and unemployment rate) and common shocks (such as the effects of the global financial crisis) over time. This estimating is guided by the large body of research on the drivers of economic growth, taking into account the idiosyncratic nature of countries in their growth patterns and the many reasons a country may overperform or underperform. In addition to conflict, countries may underperform due to sector-specific shocks, for example, the Eurozone crisis or previous growth that is not sustainable.

The rates of growth for the countries of interest for the period since the start of the conflict are based on these estimates obtained for the pre-conflict period. This projection provides the benchmark 'conflict-free' rate of growth. The difference between actual and benchmark growth rates gives an indication of a country's relative performance during the conflict period.

The technical annex to this report provides a detailed description of the econometric methodology used, as well as testing for the robustness of the results by using alternative functional specifications of our growth equations.

¹⁴ Elena Ianchovichina and Maros Ivanic, 'Economic Effects of the Syrian War and the Spread of the Islamic State on the Levant', World Bank Policy Research Working Paper, no. 7135 (2014), <http://documents.worldbank.org/curated/en/2004/12/22316371/economic-effects-syrian-war-spread-islamic-state-levant>. The study uses a version of the Global Trade Analysis Project general equilibrium model specifically configured for the purpose. The model simulates a counterfactual scenario in which the region engages in deep trade liberalisation and then simulates a conflict scenario in which this liberalisation is reversed and in which various model variables are changed in order to represent the conflict effects.

¹⁵ Collier, 'On the Economic Consequences of Civil War', 168-83; P. Collier and A. Hoeffler, 'Conflict', in *Global Crises, Global Solutions*, ed. B. Lomborg (Cambridge: Cambridge University Press, 2004); A. Abadie and J. Gardeazabal, 'The Economic Costs of Conflict: A Case Study of the Basque Country', *American Economic Review* 93/1 (2003): 113-32; A. Abadie, A. Diamond and J. Hainmueller, 'Comparative Politics and the Synthetic Control Method', *American Journal of Political Science* 59/2 (2015): 495-510.

Focus is on GDP per head of population, inclusive of net refugee numbers. These population numbers are derived by combining World Bank population estimates with UNHCR data on refugee numbers by origin and host country.¹⁶ The modelling, therefore, takes into account the considerable movement of refugees from Syria into Lebanon, Jordan and Turkey.

The movement of population, which is a direct result of conflict, has a key influence on per capita GDP impacts in the countries of interest, notably Syria, Jordan and Lebanon. It also gives rise to various policy issues that are discussed in sections 2, 5 and 6 of this report.

Figures from official sources have been used wherever possible, largely from the World Bank or UN agencies as appropriate. These agencies have been the consistent gatherers of data relevant to this report for the duration of the conflict. Given that collection of data during this crisis, particularly inside Syria, is extremely challenging, this report has used the best possible, consistent and available data in its analysis.

4.2 OVERVIEW OF RESULTS FOR THE FOUR COUNTRIES

The cost of conflict is measured by first deriving actual and benchmark growth rates and then applying them to 2010 GDP figures (the year before the conflict began). Each year that growth is less than the benchmark rate, the level of GDP per capita will fall away from expected levels. And the longer that GDP per capita is below expected levels, the greater the cumulative impact over time in terms of absolute GDP numbers. Differences in per capita GDP can be taken to represent the shortfall in living standards experienced by communities, children and their families in the economies in question. The absolute GDP figures can be interpreted as the cumulative cost of the conflict.¹⁷

Table 1 presents the estimated differences in economic performance as a result of the conflict. The effects for Syria are particularly large: GDP per capita is estimated to be around half of what it would have been in the absence of conflict. The decline in GDP in absolute terms is partly offset by shrinkage in Syria's population, which moderates the impact as measured by changes in GDP per capita, though the shrinkage in the latter is nevertheless striking.

In the case of Lebanon, total GDP growth is lower than expected. While the effects on GDP in absolute terms are relatively limited, the combination of shortfalls in growth rate and the large number of refugees create a significant effect on GDP per capita.

Smaller impacts are observed in Jordan. Growth in real GDP has been slightly lower on average, and while GDP per capita has fallen as a result of the numbers of Syrian refugees, their impact has been moderated by the departure of a number of Iraqi refugees.

The economic impact for Turkey over the conflict period is, on balance, positive (however, note the further discussion in section 4.3 below). The result for Turkey reflects a number of factors, notably, the size of the Turkish economy and its closer integration with the European Union, and the fact that spillover effects from Syria have had a number of positive impacts. These include the investment of Syrian capital in Turkey and the fact that refugees have stimulated an expansion of higher-skilled jobs.¹⁸

“As we enter the sixth year of the Syrian crisis, all international data concur that Lebanon is bearing a disproportionately high burden as a result of this conflict and is facing a humanitarian tragedy, especially in terms of refugees per capita – the highest rate in the world.”

– Lebanon Statement of Intent, Supporting Syria and the Region Conference 2016

Table 1. Summary of estimated impacts of the conflict at end of 2015

| | Average difference in per capita growth rate since 2011 | Change in real GDP per capita (US dollars) | Change in absolute GDP (billions of US dollars) |
|---------|---|--|---|
| Syria | -11.6 per cent | -3,028 (-45.1 per cent) | -275 |
| Jordan | -2.6 per cent | -1,468 (-12.1 per cent) | -7 |
| Lebanon | -4.9 per cent | -3,972 (-22.7 per cent) | -8 |
| Turkey* | -0.3 per cent | + 762 (4.2 per cent) | +54 |

*Turkey's impacts are calculated from 2012¹⁹

A discussion of various aspects of the economic performance of these countries can be found in section 4.3. The discussion is useful in highlighting how the impacts of the conflict are distributed within each of the countries concerned. Even within the countries that experience only moderately negative, or even positive results, segments of the population (notably lower-skilled workers and rural communities) have faced significant adverse impacts.²⁰

“Jordan has assumed a heavy burden due to its hosting of refugees and is carrying out a global public good on behalf of the international community. The latest refugee influx due to the war in Syria has stretched already limited resources and imposed severe stress on Jordan's economy, host communities, fiscal position and public services.”

– The Jordan Compact, Supporting Syria and the Region Conference 2016

¹⁶ Data sources are described in detail in the technical annex.

¹⁷ The GDP figures do not capture informal economic activity, which in Syria, Lebanon and Jordan is likely to have increased in significance over the course of the conflict. A case may therefore be made to the effect that changes in GDP figures do not fully represent changes in social well-being. However, it is important to bear in mind that the increasing informalisation of activity in these countries is a reflection of the undoing or fragilisation of institutions and hence linked to a reversal of progress achieved by these countries in the last decade or more. Considered from that perspective, it appears appropriate to treat changes in GDP figures as a suitable representation of changes in living standards.

¹⁸ World Bank, *The Impact of Syrians Refugees on the Turkish Labour Market* (2015), 13, <http://documents.worldbank.org/curated/en/2015/08/24946337/impact-syrians-refugees-turkish-labor-market>.

¹⁹ The effects are measured from 2012 because a number of country-specific factors led Turkey to have a much-higher-than-usual rate of growth in 2011. It is unlikely that this spike in growth is attributable to the conflict. Nor is it likely that this one of spike in the growth rate is reflective of longer-term growth prospects for the Turkish economy.

²⁰ Note that the World Bank GDP data for Syria extends only to 2007, after which growth rates are taken from the Total Economy Database.

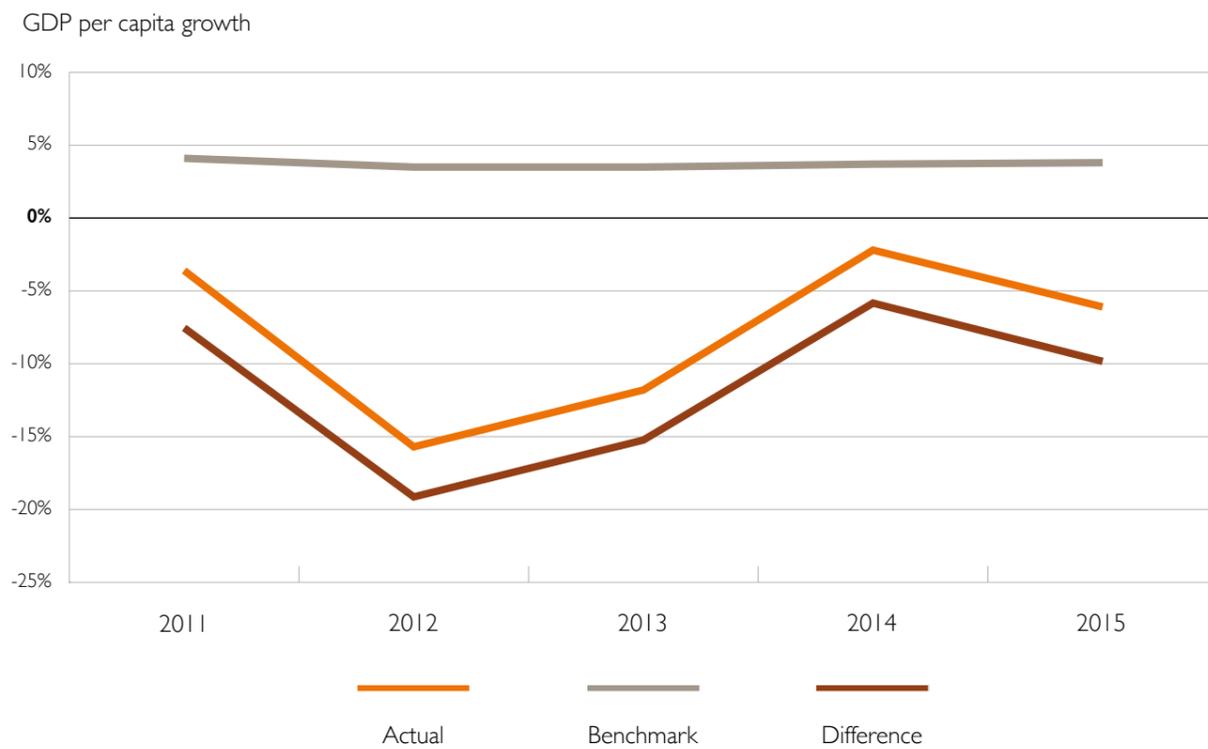
Detailed description of cost of conflict to date

Impact on growth rate

Figure 1 compares actual and benchmark growth rates for Syria. The cross-country regression analysis suggests that a country with Syria's characteristics would have been expected in the period 2011–15 to have a per capita growth rate between 3.4 per cent and 4.1 per cent. But actual

growth per capita has contracted during that period by between 2.2 per cent and 17 per cent. The difference between these two lines shows the estimated impact of conflict, causing growth to be lower than expected by between 5.8 per cent and 20.5 per cent.

Figure 1. Syria: Comparison of actual and benchmark growth rates during conflict period

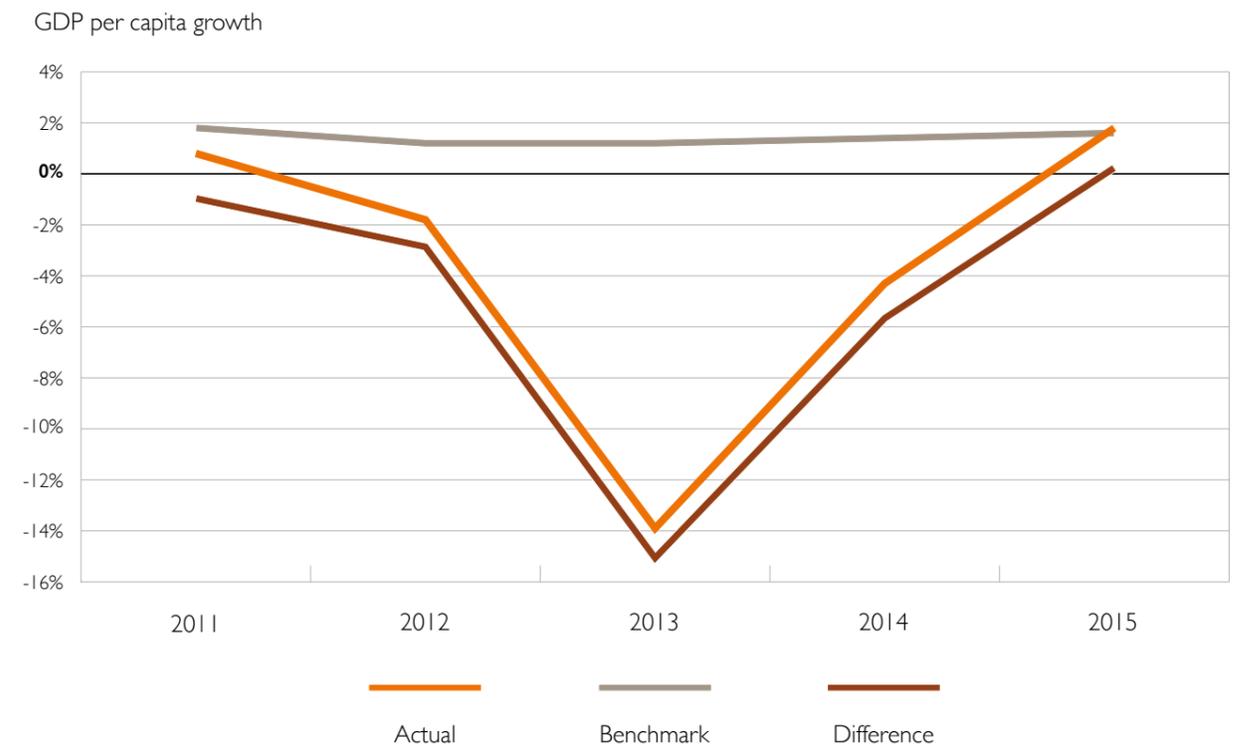


Source: Frontier Economics analysis of World Bank, UNHCR and Total Economy Database data

Figure 2 shows the equivalent results for Lebanon. A country with the same characteristics would have expected GDP per capita growth between 1.2 per cent and 1.8 per cent in the conflict period. From 2012 to 2014, actual GDP growth per capita was well below this, driven by large increases in population. The difference between actual and benchmark growth is -4.9 per cent on average across these five years.

The 'v-shaped' appearance of the line depicting actual per capita growth rates illustrates the pronounced impact of the large numbers of Syrian refugees. Once that initial impact is absorbed, per capita growth rates recover as longer-term determinants of growth kick in.

Figure 2. Lebanon: Comparison of actual and benchmark growth rates during conflict period

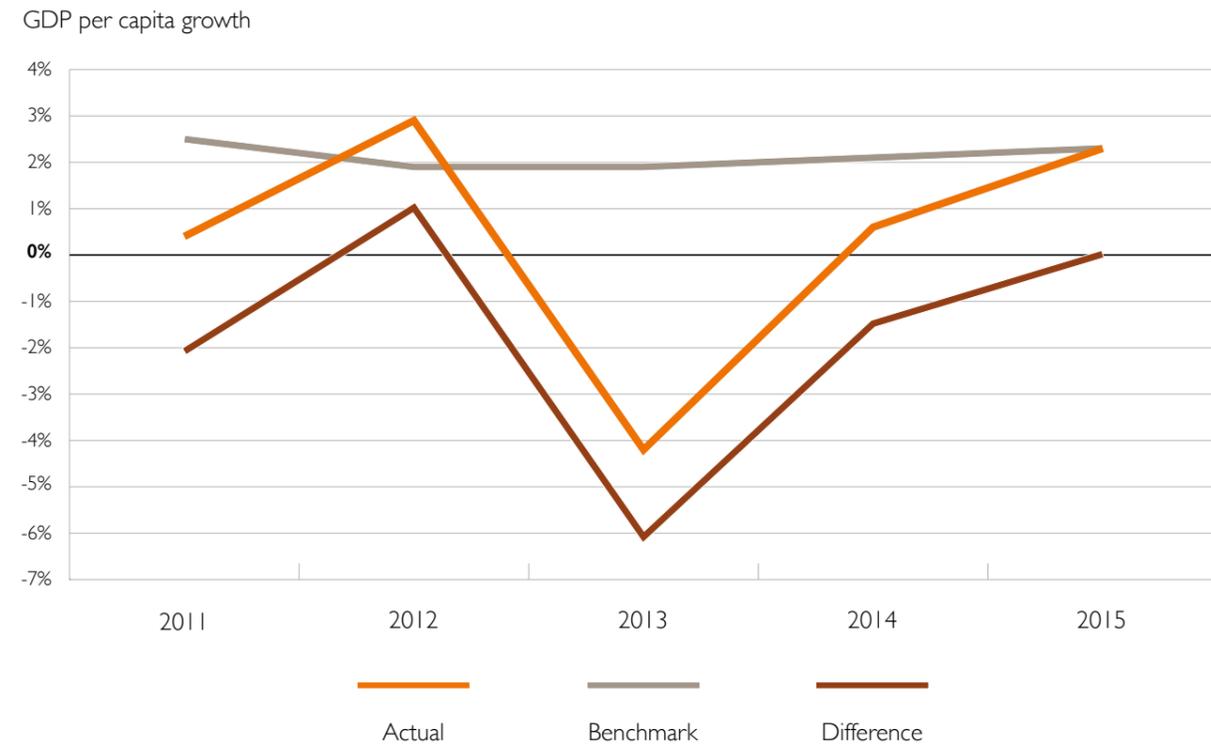


Source: Frontier Economics analysis of World Bank, UNHCR and Total Economy Database data

Figure 3 shows the results for Jordan. Actual growth in GDP per capita is less than the benchmark rate. The difference ranges from +1 per cent to -4 per cent and is -1.6 per cent on average.

For the same reasons as Lebanon, the graph depicting per capita growth rates exhibits a V-shaped structure.²¹

Figure 3. Jordan: Comparison of actual and benchmark growth rates during conflict period



Source: Frontier Economics analysis of World Bank, UNHCR and Total Economy Database data

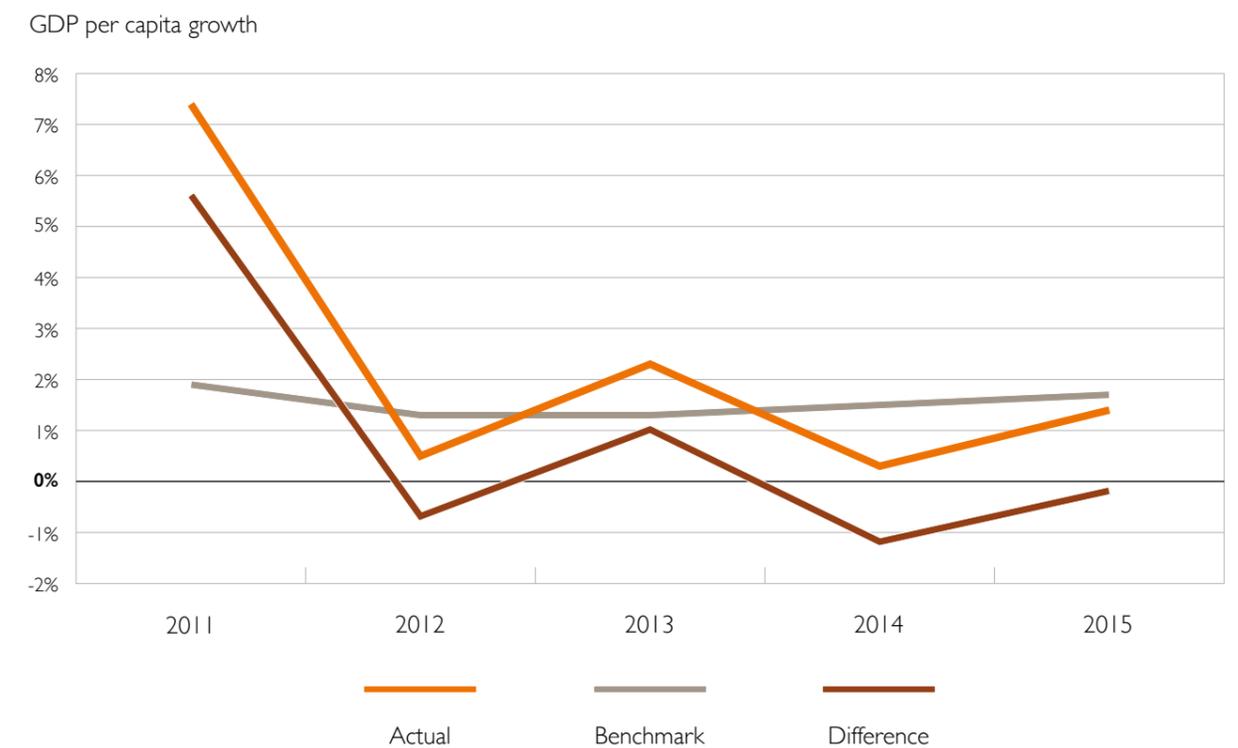
²¹ Note that these results are sensitive to assumptions regarding Iraqi refugees in Jordan. The UNHCR figures show 450,000 in 2011, falling to 65,000 in 2012, but this is a data revision rather than a movement of that magnitude. These movements are not currently explicitly captured in the counterfactual. The higher-than-expected growth in GDP per capita for 2012 comes about because the population drops sharply as a result of Iraqi refugees leaving Jordan. These are partly replaced by Syrian refugees, although in 2012 there is a net reduction if the reported UNHCR yearly totals are to be taken at face value. See UNHCR figures for Iraq generally, <http://data.unhcr.org/syrianrefugees/country.php?id=103>.

In the case of Turkey (Figure 4 below), the actual growth exceeds the benchmark by 0.9 per cent per year on average. As explained in the technical annex, the result for Turkey is sensitive to whether the spike in 2011 growth is assumed to be reflective of longer-term trends. The more we allow for the possibility that some of this increased growth would have persisted in years after 2011, were it not for the conflict, the more negative the estimated impact of the conflict.

factors that were not sustainable. At the time the International Monetary Fund attributed the spike to a surge in domestic demand fuelled by historically low interest rate and a surge of short-term capital flows, and it also cautioned about the risks these posed.²² The spread of results described for Turkey in the technical annex, under various modelling alternatives, suggests that the most plausible view is that the conflict has had a negligible or moderately positive impact on Turkey's economy.

On balance, it seems plausible that the spike in growth in 2011 represented

Figure 4. Turkey: Comparison of actual and benchmark growth rates during conflict period



Source: Frontier Economics analysis of World Bank, UNHCR and Total Economy Database data

²² International Monetary Fund, *Turkey – Article IV Consultations, Preliminary Conclusions* (2011), <http://www.imf.org/external/np/ms/2011/091911a.htm>.

Impact on GDP per capita

Projections over time of benchmark GDP per capita are derived by applying the GDP growth rates to 2010 GDP per capita. This is shown in Figure 5, with dashed lines showing the benchmark values and solid lines showing actuals. For each year that growth is less than expected, actual and benchmark GDP levels will diverge further.

The benchmark lines are relatively smooth, as there is little reason to predict any sharp movements from year to year. For Syria, there is a reasonably steady decline in actuals over time. Both Lebanon and Jordan diverge considerably at 2013, when there were large increases in refugee populations in those countries.²³ For Turkey, we begin at the year 2012, as the higher-than-expected growth in 2011 is unlikely to be an impact of the conflict (and Turkey

had been strongly outperforming its benchmark in the previous year). From this point there is little divergence.

The headline numbers for GDP per capita can mask significant distributional differences across segments of population. As documented in section 4.3, low-wage low-skill workers in Lebanon, Turkey and Jordan may have been affected by the large numbers of refugees because of labour-market displacement effects. At the same time, higher-skilled workers are reported to have benefitted from the arrivals because of increased demand for their services and because the jobs performed by refugees and low-skilled workers are complementary to higher-skilled jobs. While reliable data is scarce, it is expected that the cumulative effect will be to widen income inequality.²⁴

²³ According to UNHCR data, in Jordan the total persons of concern increased from about 117,000 in January 2013 to about 576,000 in December 2013, <http://data.unhcr.org/syrianrefugees/country.php?id=107>. In Lebanon the number of registered Syrian refugees in January 2013 was about 130,000 and by December 2013 about 802,000 were registered, <http://data.unhcr.org/syrianrefugees/country.php?id=122>.

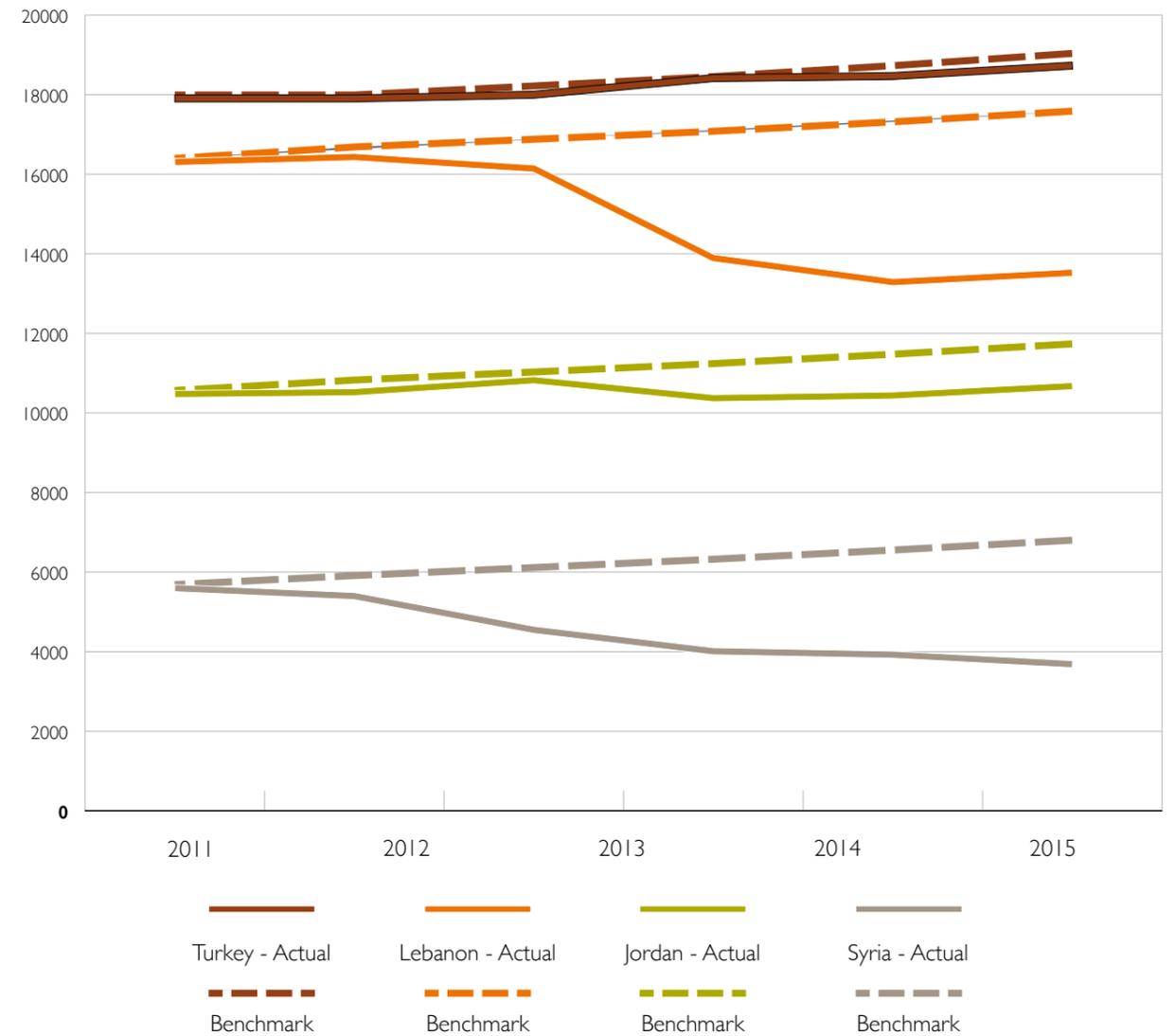
²⁴ World Bank, *Lebanon: Overview: Context* (September 2015), <http://www.worldbank.org/en/country/lebanon/overview>.



When families flee conflict, such as those in Al-Haramain camp in northern Syria, they leave their homes, schools and opportunities for employment behind.

Figure 5. Comparison of actual and benchmark levels of GDP per capita during the conflict period

GDP per capita (US\$, constant 2011)



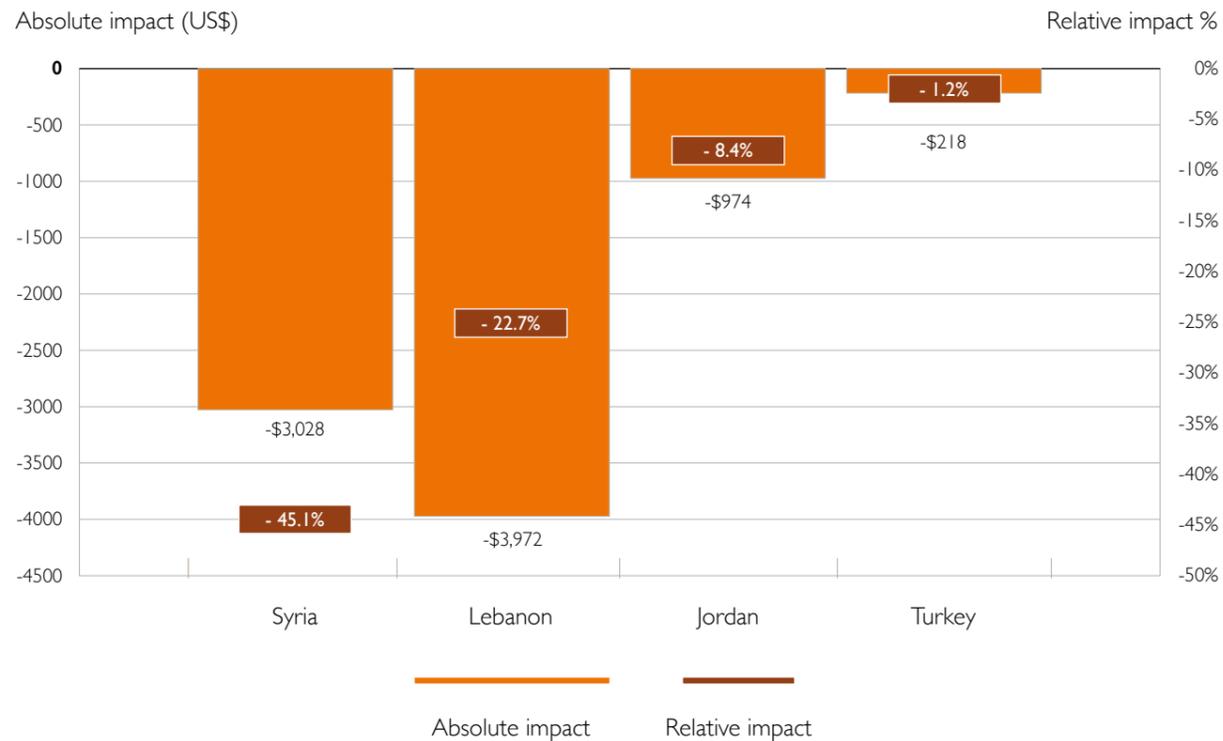
Source: Frontier Economics analysis of World Bank, UNHCR and Total Economy Database data

Figure 6 compares actual and benchmark GDP per capita as of 2015, giving a sense of the overall absolute and relative impacts. By 2015, GDP per capita in Syria was US\$3,000 less than the benchmark level, a reduction of some 45 per cent. There has also been a reduction of approximately 14 per cent in the resident population. In absolute terms, the largest reduction in per capita GDP is for Lebanon – nearly US\$4,000, or 22.7 per cent. The impact for Jordan

is smaller – around US\$1,000 per capita per year, or 8.4 per cent less than 2015 benchmark levels.

It is useful to note that these figures are averages across the population only; some communities or groups may be affected by this reduction more acutely than others. Refugee populations, as well as already low socioeconomic groups, are likely to be particularly vulnerable to the reduction and, in turn, so are their children.

Figure 6. Overall impacts on 2015 GDP per capita



Source: Frontier Economics analysis of World Bank, UNHCR and Total Economy Database data

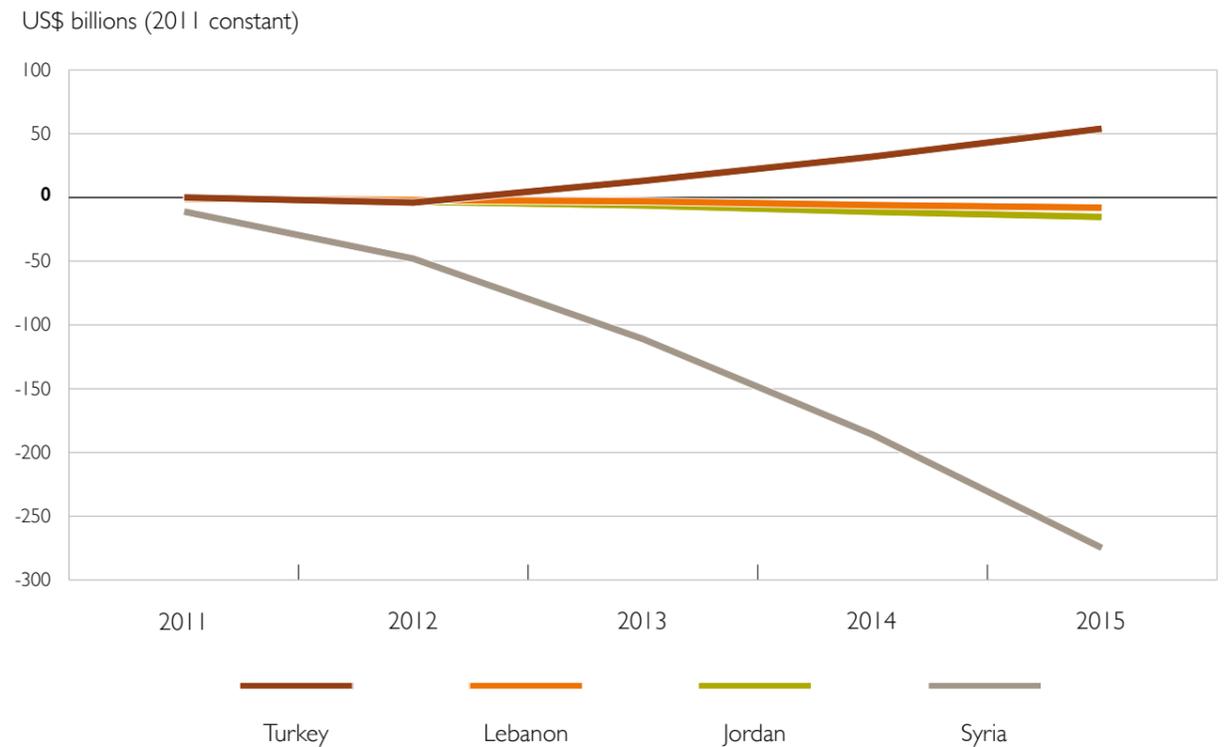
Cumulative GDP impact over time

In Figure 7 the costs as cumulative impacts show how costs gradually accrue over time. For example, in 2012 the cumulative impact on Syria was US\$48 billion (US\$11 billion in 2011 plus US\$37 billion in 2012). By the end of 2015 the cumulative impact was US\$275 billion.

To put that figure in context, the global aid budget, as measured by net official

development assistance delivered by all OECD economies, amounted to US\$135 billion in each of 2013 and 2014.²⁵ It is close to 150 times the Syrian health budget prior to conflict.²⁶ It is nearly one and a half times the budget for the UK's National Health Service for 2015–16.²⁷ It is approximately as much as France and Germany together invested in public education.²⁸ It is roughly the GDP of Portugal in 2014.²⁹

Figure 7. Cumulative impacts from 2011



Source: Frontier Economics analysis of World Bank, UNHCR and Total Economy Database data

25 OECD, *Development Aid Stable in 2014 But Flows to the Poorest Countries Are Falling* (2015), [http://www.oecd.org/dac/stats/documentupload/ODAper cent202014per cent 20Technicalper cent20Note.pdf](http://www.oecd.org/dac/stats/documentupload/ODAper%20cent202014per%20cent20Technicalper%20Note.pdf).

26 Calculations based on data retrieved from the World Bank's World Development Indicators 2015, <http://data.worldbank.org/data-catalog/world-development-indicators>.

27 The Kings Fund, *The NHS budget and How It Has Changed* (2015), <http://www.kingsfund.org.uk/projects/nhs-in-a-nutshell/nhs-budget>.

28 Calculations based on data retrieved from databases available in association with OECD, *Education at a Glance* (2015). Latest data available is for 2012.

29 Calculations based on data retrieved from the World Bank's World Development Indicators 2015. Country GDP data are expressed in constant 2011 US dollars, using Purchasing Power Parity exchange rates.

Projected future conflict costs under different scenarios

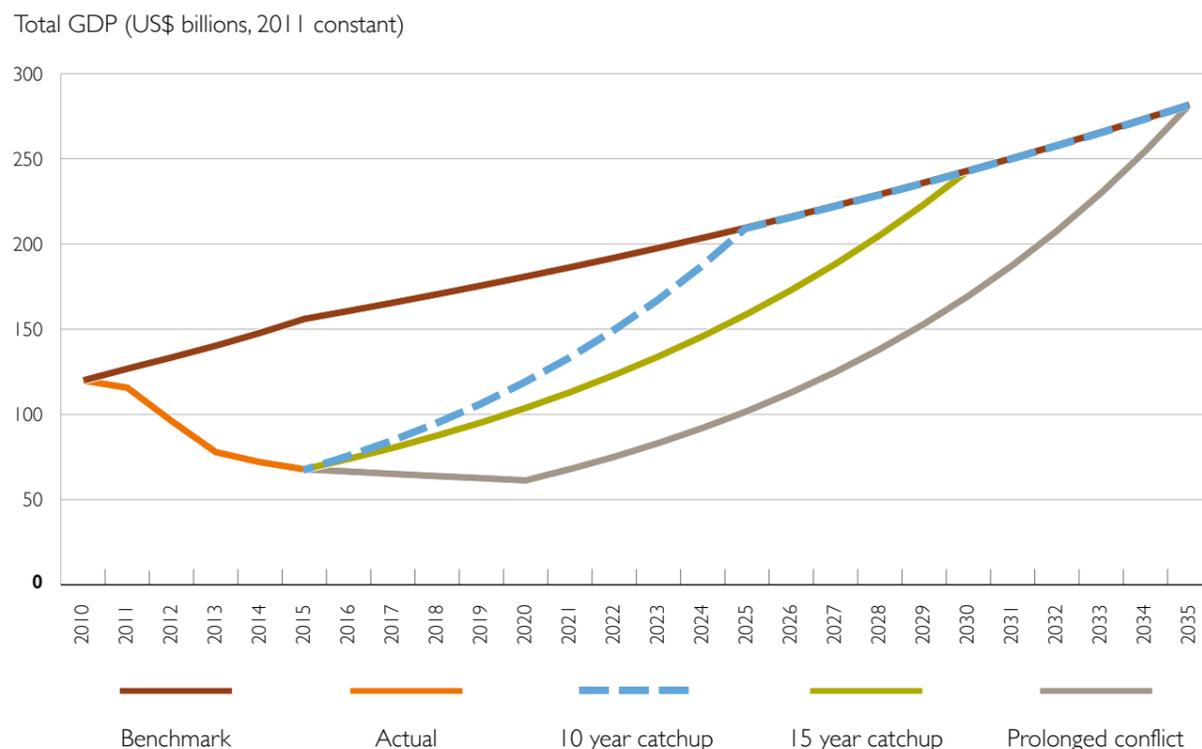
The challenge that each country will face in continued cumulative cost depends on assumptions concerning how long the conflict will continue and how long recovery might take. Under the optimistic scenario, the assumption is that the conflict can be resolved swiftly and that recovery to non-conflict levels will take either 10 or 15 years. Under the pessimistic scenario, the assumption is that the conflict will continue for another 5 years with annual contraction of Syrian GDP of 2 per cent in that period, followed by a 15-year recovery period (from 2020 to 2035).³⁰ No further population changes are assumed.

The loss of total GDP for Syria is shown in Figure 8. The brown and orange lines show benchmark and actual GDP per capita, while the other lines show GDP under different catch-up assumptions over time.

The area between the benchmark line and the catch-up lines shows the future cumulative costs of conflict. If convergence could be achieved within 10 years, the total cost, in today's money, would be US\$448 billion. But if it takes 15 years, the total cost in today's money would be US\$689 billion.

The impacts would be even worse if the conflict were to be prolonged and if further displacement and damage were to occur. A prolonged conflict would involve costs of US\$1.295 trillion in today's money. The convergence targets are quite demanding – for catch-up to occur in 10 years, growth of total GDP would need to be 8.9 per cent higher (5.9 per cent higher for convergence in 15 years).

Figure 8. Syria: Catch-up in total GDP under different scenarios



Source: Frontier Economics analysis of World Bank, UNHCR and Total Economy Database data

The future costs measured in total terms are shown in Table 2. Results are also shown with future discounting of costs at 3.5 per cent.

As can be seen, the future costs for Lebanon and Jordan are much smaller than those for Syria. This is because these economies have not reduced too much in overall size. They would require only minor boosts to the growth rate (in the region of 0.2–0.6 per cent) in order to converge back to the non-conflict growth path.

Note that these catch-up scenarios show the additional growth required for total GDP to return to trend. They do not

reflect the fact that growth rates will need to exceed trends if the populations of these countries remain larger than in the past because of the significant number of refugees. Therefore, it remains a challenge for Jordan and Lebanon to deliver additional growth in order for per capita GDP to return to trend.

Likewise, it may be unrealistic to assume that Syria would converge in total GDP terms, as the population will be smaller than the non-conflict counterfactual (due to deaths and refugee outflow).

The per capita growth rates required for convergence are shown in Table 3. These figures assume no further flow of refugees.³¹

| | No discounting | | | With discounting at 3.5 per cent | | |
|-------------------------------------|----------------|------------|------------|----------------------------------|------------|------------|
| | Syria | Jordan | Lebanon | Syria | Jordan | Lebanon |
| Swift resolution scenario | | | | | | |
| 10-year recovery | -513 | -23 | -11 | -448 | -20 | -10 |
| 15-year recovery | -841 | -38 | -19 | -689 | -31 | -15 |
| Prolonged conflict scenario | | | | | | |
| Total future costs (2016–35) | -1,719 | -69 | -34 | -1,295 | -53 | -26 |
| Conflict period (2016–20) | -534 | -25 | -12 | -480 | -22 | -11 |
| Recovery period (2021–35) | -1,185 | -44 | -22 | -815 | -31 | -15 |

Source: Frontier Economics analysis of World Bank, UNHCR and Total Economy Database data

30 For Jordan and Lebanon, no further contraction is assumed, but that convergence to the non-conflict growth path only commences in 2020.

31 Although the net impacts on total GDP for the neighbouring countries have been estimated, this could include both a positive displacement effect and a negative instability effect. Total GDP might reduce in the event of refugee outflow, that is, per capita convergence in the host countries cannot necessarily be achieved by repatriation of refugees.

| Country | 10-year convergence | 15-year convergence |
|---------|---------------------|---------------------|
| Jordan | 2.9 per cent | 2.5 per cent |
| Lebanon | 4.6 per cent | 3.7 per cent |
| Syria | 8.2 per cent | 6.1 per cent |

Source: Frontier Economics analysis of World Bank, UNHCR and Total Economy Database data

4.3 DISCUSSION OF COUNTRY-SPECIFIC EFFECTS

Syria

Before the start of the conflict Syria's economic performance was relatively strong: real GDP grew at 5 per cent on average per year, and unemployment averaged around 8 per cent between 2006 and 2010.³² As reported in section 4.2, real GDP per capita in 2015 is around half of what it might have been in the absence of conflict – a figure that would have been significantly higher were it not for the considerable decline in the size of the Syrian population.

The figures are consistent with reports of widespread destruction of assets, capital flight, business closure and bankruptcy.³³ The capital stock more than halved between 2010 and 2015.³⁴ Losses have been greatest in the energy and manufacturing sectors.³⁵ Effective electricity generation capacity has been reduced by 70 per cent since 2011.³⁶ Oil production under state control fell from 387,000 barrels per day to less than 10,000 barrels per day, as a result of international sanctions, damage to

refining operations and territorial gains by armed groups.³⁷

Meanwhile, the manufacturing sector, once a key driver of economic growth, job creation and export diversification, contracted to 35.4 per cent of its pre-conflict size by 2015.³⁸ Over 90 per cent of industrial enterprises had closed in the Alsheck Najjar industrial zone in Aleppo and the Adraa industrial zone in rural Damascus by the end of 2013; firms that survived the conflict were estimated to have operated at less than 30 per cent capacity.³⁹

Agriculture has also suffered as result of the conflict. Wheat production halved between 2011 and 2014, due to military encroachment on farmland; damage to grain silos; and shortages of seeds, fertilisers, pesticides and fuel.⁴⁰ National stocks of sheep, cattle and goats have declined by 30–40 per cent since 2010, whilst poultry production has fallen by

32 Chatham House, *Syria's Economy: Picking up the Pieces* (2015), 10, <https://www.chathamhouse.org/news/2015-06-23-syrias-economy-picking-pieces>.

33 Syrian Centre for Policy Research, *Confronting Fragmentation*, 6.

34 Ibid., 30.

35 Chatham House, *Syria's Economy*, 2.

36 Ibid., 3.

37 Ibid.

38 Syrian Centre for Policy Research, *Confronting Fragmentation*, 18.

39 Syrian Centre for Policy Research, *Squandering Humanity: Socioeconomic Monitoring Report on Syria* (2014), 13.

40 Chatham House, *Syria's Economy*, 14.

more than 50 per cent.⁴¹ However, with productive capacity shrinking faster in other sectors of the economy, agriculture has assumed a more dominant position within the Syrian economy, accounting for 24 per cent of GDP in 2013, compared to 16 per cent in 2010.⁴²

Unsurprisingly, unemployment has soared over the course of the conflict, from 14.9 per cent in 2011 to 52.9 per cent by the end of 2015.⁴³ The dwindling formal labour market has led many Syrians to turn to informal activities, which are often unskilled, labour-intensive and poorly paid.

Lebanon

After a decade of slow growth due to economic crises, political assassinations and armed conflict, Lebanon's economy picked up its pace in 2007, with real GDP growing at over 8 per cent for three consecutive years.⁴⁴ Growth was driven by capital inflows, in particular from the Gulf Cooperation Council, which financed consumption and boosted sectors such as tourism and real estate.⁴⁵

By 2011, economic growth had begun to stall due to a combination of factors. The Syrian conflict ensured that any positive growth stopped. Foreign investor and consumer confidence deteriorated significantly as a result of the turmoil in Syria and its security spillovers into Lebanon, reducing capital flows to the country.⁴⁶ Increased demand and investment from Syrian refugees has

mitigated but not offset this loss.⁴⁷ Weaker economic growth and increased government spending to accommodate the large numbers of refugees have severely strained Lebanon's public finances, which were already structurally weak before the conflict.⁴⁸ Coupled with a rising interest risk premium, growing fiscal deficits have halted Lebanon's progress in reducing its debt-to-GDP ratio, which in 2012 rose for the first time since 2006.⁴⁹

Falling demand in Syria, one of Lebanon's main export destinations, has hurt Lebanese exporters that supplied Syria before the conflict. The World Bank estimates that each business exporting to Syria prior to the conflict would have, on average, lost US\$90,000 in 2012.⁵⁰ However, the collapse of Syrian production has also generated opportunities for Lebanese firms that did not previously export to Syria; this replacement effect is estimated to offset exactly the negative impact on pre-crisis exporters.⁵¹ Whilst Lebanese exports to Syria have not changed on an aggregate level, the conflict has had a distributional impact, benefitting exporters of foodstuff and tobacco at the expense of exporters of manufactured goods and mineral fuels.⁵²

The Lebanese labour market has been profoundly affected by the influx of refugees, whose arrival expanded the total labour force by 50 per cent by the end 2014.⁵³ Women, youth and unskilled Lebanese workers have been particularly affected.⁵⁴ Syrian refugees predominantly find work,

41 Ibid., 15.

42 Syrian Centre for Policy Research, *Squandering Humanity*, 20.

43 Syrian Centre for Policy Research, *Confronting Fragmentation*, 7.

44 World Bank, 'Data – GDP growth (annual per cent)' (2015), <http://data.worldbank.org/indicator/NY.GDP.MKTP.KD.ZG>.

45 World Bank, *Lebanon Economic Monitor Spring 2015* (2015), 10, <http://www.worldbank.org/en/country/lebanon/publication/lebanon-economic-monitor-spring-2015>.

46 Ibid.

47 Ibid.

48 World Bank, *Lebanon: Economic and Social Impact Assessment of the Syrian Conflict* (2013), 34, <http://documents.worldbank.org/curated/en/2013/09/18292074/lebanon-economic-social-impact-assessment-syrian-conflict>.

49 Ibid.

50 World Bank, *The Impact of the Syrian Conflict on Lebanese Trade* (2015), 4, <http://www.worldbank.org/en/country/lebanon/publication/the-impact-of-the-syrian-conflict-on-lebanese-trade>.

51 Ibid., 32.

52 Ibid., 4.

53 World Bank, *Lebanon Economic Monitor Spring 2015*, 13.

54 World Bank, *Lebanon: Economic and Social Impact Assessment of the Syrian Conflict*, 83.

often informally, in low-paid jobs such as those in agriculture, domestic services and construction. Until recently, Syrian refugees in Lebanon had been required to sign a pledge not to work in order to renew a residency visa on the basis of their UNHCR registration document, leading to an estimated 92 per cent of refugees working without a contract or associated legal rights.⁵⁵

This has the effect of driving down wages and displacing Lebanese workers in these sectors. Competition at the lower end of the labour market pushes both Syrians and Lebanese further into poverty.⁵⁶ The World Bank estimates that up to 300,000 Lebanese workers, mostly young and/or low skilled, will become unemployed as the result of the flow of Syrian refugees.⁵⁷ On the other hand, business owners in Lebanon benefit from reduced production costs,⁵⁸ and Syrian refugees may create other positive labour market effects in the longer term by filling skills shortages and generating new employment opportunities for Lebanese workers.⁵⁹

Jordan

Jordan was still suffering from the impact of the global financial crisis when the conflict in Syria began. Annual GDP growth had fallen from an average of 8 per cent in 2004–8 to 2 per cent in 2010.⁶⁰ The Jordanian labour market was structurally weak, with chronic unemployment at around 12 per cent

in 2010⁶¹ and youth unemployment at more than 30 per cent.⁶² The public sector historically employed over one-third of Jordanian employees⁶³ and accounted for half of total job creation.⁶⁴

The conflict in Syria has inflicted large losses on Jordanian exporters. Exporters to Syria are estimated to have lost US\$340,000 on average in 2012, around three-quarters of their pre-conflict level.⁶⁵ Exporters of food, livestock, tobacco and manufactured goods have been particularly affected.⁶⁶ The drop in demand for Jordanian exports has been much steeper than for Lebanese exports, perhaps due to the higher intensity of conflict in Syrian areas close to Jordan; in comparison, Damascus, the main Syrian market for Lebanese products, has remained relatively stable throughout the conflict.⁶⁷ Further, unlike Lebanon, Jordanian firms have not benefitted from any significant rise in demand to replace the loss of Syrian production.⁶⁸

The impact of Syrian refugees on the Jordanian labour market remains ambiguous. A survey of households in the Amman, Irbid and Mafrqa governorates, which together host 76 per cent of all Syrian refugees, shows that unemployment among Jordanian nationals has increased from 15 per cent in 2011 to 22 per cent in 2014.⁶⁹ However, the conflict in Syria coincides with a fiscal consolidation

55 Joint Agency Briefing Paper, *Right to a Future*, 6.

56 Ibid., 6.

57 World Bank, *Lebanon: Economic and Social Impact Assessment of the Syrian Conflict*, 90.

58 World Bank, *Lebanon Economic Monitor Spring 2015*, 13.

59 World Bank, *Lebanon: Economic and Social Impact Assessment of the Syrian Conflict*, 87.

60 World Bank, *Data – GDP Growth (annual per cent)* (2015).

61 World Bank, *Jordan Economic Monitor Spring 2014* (2014), 8, <http://www.worldbank.org/en/country/jordan/publication/jordan-economic-monitor-spring-2014>.

62 World Bank, *Data - Unemployment, Youth Total (per cent of total labour force ages 15–24)* (2015), <http://data.worldbank.org/indicator/SL.UEM.1524.ZS>.

63 International Labour Organisation, *Macroeconomic Policies and Employment in Jordan: Tackling the Paradox of Job-Poor Growth* (2012), 13, http://www.ilo.org/wcmsp5/groups/public/---ed_emp/documents/publication/wcms_191243.pdf.

64 World Bank, *Jordan Economic Monitor Spring 2014*, 7.

65 World Bank, *The Impact of the Syrian Conflict on Lebanese Trade*, 31.

66 Ibid., 35.

67 Ibid., 14.

68 Ibid., 32.

69 International Labour Organisation, *Impact of Syrian Refugees on the Jordanian Labour Market* (2015), 5, http://www.ilo.org/beirut/publications/WCMS_364162/lang-en/index.htm.

programme which reduced public-sector employment,⁷⁰ and the qualitative evidence suggests that Syrians tend to work in low-paid, informal sectors (especially as formal avenues of employment have been closed off) that typically employ migrant labourers rather than Jordanian nationals.⁷¹

Furthermore, the increased numbers of refugees have increased demand and generated a growing aid economy, likely to have created new jobs.⁷² The flow of Syrian capital to Jordan is also likely to have generated employment opportunities for Jordanian nationals: Jordan is estimated to have received US\$1 billion of foreign direct investment from Syria in 2013,⁷³ and the manufacturing sector in Jordan has benefitted from the relocation of some Syrian industries.⁷⁴

Before the outbreak of the conflict, the countries in the region were embarking on a process of regional trade integration. The World Bank estimates that the foregone benefits of trade liberalisation were substantial, as this would have accelerated economic growth, diversification and job creation in the region.⁷⁵ The opportunity cost to Jordan is particularly high, estimated at four times the direct economic costs of the Syrian conflict (in terms of trade, labour market and population effects).⁷⁶

Turkey

Turkey saw a series of structural economic reforms following the

recession in 2001 – privatisation, the introduction of a free-floating lira, the establishment of an independent central bank and regulatory bodies – that improved macroeconomic stability and growth over the past decade.⁷⁷ A stable political environment further encouraged domestic and foreign investment,⁷⁸ contributing to rapid GDP growth averaging 7 per cent between 2002 and 2007.⁷⁹ By the onset of the Syrian conflict, Turkey's economy had already rebounded from the impact of the global financial crisis, with GDP growing at 9 per cent for two consecutive years.⁸⁰

Due to Turkey's large and diversified economy and its relatively stable political situation, the impact of the Syrian conflict has been either negligible or moderately positive. Turkish exports to Syria plummeted immediately after the conflict began, but by 2014 had returned to pre-crisis levels.⁸¹ Overall exports do not appear to have suffered from the conflict, as trade to Syria accounts for only 1 per cent of total exports.⁸²

On the other hand, Turkey has benefitted from significant capital flight from Syria. In the first nine months of 2015, 1,148 companies were founded in Turkey with Syrian capital, a total of US\$161 million in capital.⁸³ Regions close to the Syrian border have particularly gained from Syrian investment; in 2014, Syrian partnerships constituted one in

70 World Bank, *Jordan Economic Monitor Spring 2015*, 7.

71 Chatham House, *Syrian Refugees in Jordan* (2015), 5, https://www.chathamhouse.org/sites/files/chathamhouse/field/field_document/20150921SyrianRefugeesCarrion.pdf.

72 International Labour Organisation, *Impact of Syrian Refugees on the Jordanian Labour Market*, 7.

73 Chatham House, *Syrian Refugees in Jordan*, 6.

74 World Bank, *Jordan Economic Monitor Spring 2014*, 7.

75 World Bank, *Economic Effects of the Syrian War and the Spread of the Islamic State on the Levant*, 2.

76 Ibid., 19.

77 Chatham House, *After the Boom: Risks to the Turkish Economy* (2013), 2, <https://www.chathamhouse.org/publications/papers/view/193715>.

78 Ibid.

79 World Bank, 'Data – GDP growth (annual per cent)', 2015.

80 Ibid.

81 Data extracted from the Turkish Statistical Institute, Ministry of Customs and Trade, *Foreign Trade Statistics*, www.turkstat.gov.tr/PreTablo.do?alt_id=1046/

82 Ibid.

83 Hurriyet Daily News, *Number of New Firms Opened by Syrians in Turkey on Rise* (2015), <http://www.hurriyetdailynews.com/number-of-new-firms-opened-by-syrians-in-turkey-on-rise.aspx?PageID=238&NID=90978&NewsCatID=345>.



Without access to formal labour markets, displaced Syrians seek out informal opportunities where possible to earn an income for their families.

ten new businesses in Hatay and one in three new businesses in Kilis.⁸⁴

Refugees from Syria have had a mixed impact on the Turkish labour market. The World Bank reports evidence of displacement of local workers in informal and low-wage agricultural occupations.⁸⁵ The impact is concentrated in provinces along the Turkish-Syrian border; in particular Gaziantep and Hatay.⁸⁶ However, the flow of refugees has also generated higher-wage, formal jobs for Turkish workers, due to increased demand and reduced costs of production.⁸⁷ This has mitigated the displacement effect, such that net displacement of local workers by Syrian refugees is around one-to-one, with a shift in the composition of Turkish employment towards higher-quality jobs.⁸⁸ These labour market effects, together with inflows of capital associated with flows of people, explain why the

range of overall effects of the conflict on Turkey varies between negligible, on the downside, to moderately positive, on the upside. They are consistent with the broader literature on the impact of refugees and migrants on the economy of richer host countries.⁸⁹

“ It has been a hardship but I feel I have risen in this time.”

– Hasnaa, a Syrian widow living in Urfa, Turkey, describes working as a hairdresser to support her four children.

84 Ibid.

85 World Bank, *The Impact of Syrians Refugees on the Turkish Labour Market*, 12.

86 Ibid., 5.

87 Ibid., 13.

88 Ibid., 3.

89 International Monetary Fund, *The Refugee Surge in Europe: Economic Challenges* (January 2016), <https://www.imf.org/External/pubs/cat/longres.aspx?sk=43609.0>.

5. FINANCIAL COSTS

In addition to the economic costs described above, the protracted conflict has dramatically weakened the fiscal position in Syria, prompting the government to borrow heavily to maintain expenditure on basic goods. The flow of Syrian refugees into neighbouring countries also increased government expenditure in host countries in order to expand public services provision and maintain service quality. The diversion of public spending away from long-term investment aimed at creating growth and towards short-term upkeep of existing provision is likely to curtail the potential for economic growth across the region.

5.1 SYRIA

The loss of infrastructure, trade and employment as a result of the conflict has severely weakened the Syrian government budget. Oil revenues, which accounted for a quarter of all government revenue in 2011, have halved due to armed conflict and international sanctions.⁹⁰ Profits from state-owned enterprises have fallen sharply, as have tax receipts from individuals and private-sector firms.⁹¹ To counter the effects of conflict on living conditions, up through 2013 the government maintained expenditure on public-sector wages and hugely increased subsidies and transfers to meet the need for basic foodstuffs, fuel and electricity.⁹²

The government budget balance (including off-budget subsidies) grew from 2 per cent of GDP in 2010 to 54 per cent of GDP in 2013.⁹³ The government is increasingly dependent on credit from Iran as its only source of revenue.⁹⁴ Public debt has increased substantially relative to GDP, from 23 per cent in 2010 to 126 per cent in 2013.⁹⁵ The additional borrowing reflects the financing costs of the conflict and the continued need to meet a minimum level of service delivery; in addition, a shrinking resource base reflects a collapsing economy and a dwindling population. Because these loans are not being invested to create growth, their repayment will impose a heavy burden on the next generation once the violence subsides.⁹⁶ Reconstruction efforts after the conflict ends will place further demands on government budgets.

“ There must be increased investment in building the resilience of people and communities – within Syria and within the countries in the neighbourhood who host many refugees. Development actors can respond with support for jobs and livelihoods, for education and health provision, and for basic services like water, sanitation, electricity, and waste disposal... Services like these support people to live in dignity.”

– Helen Clarke,
UN Development
Programme Administrator

90 Middle East Eye, *Lost Mines, Oil Fields Further Shrink Syrian Government Coffers* (2015), <http://www.middleeasteye.net/news/losses-resources-front-pressure-syrian-government-revenues-969060676>.

91 Syrian Centre for Policy Research, *Confronting Fragmentation*, 33.

92 Syrian Centre for Policy Research, *Squandering Humanity*, 23.

93 Ibid.

94 Ibid., 24.

95 Ibid.

96 Ibid., 25.

5.2 NEIGHBOURING COUNTRIES

The large numbers of Syrians seeking refuge and protection have also taken a heavy toll on the government budgets of host countries. Refugees living outside camps have put pressure on public-service provision, which was already stretched in Lebanon and Jordan, in particular water and electricity infrastructure, water and sanitation management, health care and education, as well as defence spending on border controls and policing.⁹⁷

Further, the adverse effect of Syrian refugees on local employment levels has pushed up social welfare spending. The fiscal cost of accommodating unprecedented levels of Syrian refugees is likely to divert government resources away from long-term investments, compromising the future growth potential of host countries.⁹⁸

The strain on public services has reduced access and service quality for the local population.⁹⁹ Restoring service quality to their pre-conflict levels would require substantial additional costs, further diverting resources from long-term investment to short-term upkeep.

Lebanon

The direct cost of Syrian refugees on the Lebanese government budget is estimated at up to US\$1.1 billion between 2012 and 2014.¹⁰⁰ Increased demand for electricity accounts for over half of this increase in government expenditure; electricity in Lebanon is entirely dependent on public subsidies,

with the electricity tariff set below cost recovery level.¹⁰¹ A further fifth of the cost can be attributed to increased health-care use and the pressure on Lebanon's transport infrastructure, which was already in poor condition before the onset of the conflict.¹⁰²

Spending on the public education system (which previously catered to only 30 per cent of mostly low-income Lebanese children¹⁰³), water and sanitation infrastructure and welfare benefits has also increased as a result of the numbers of Syrians seeking protection as refugees.¹⁰⁴ As well as increasing government expenditure, the surge in demand for public services has been accommodated by reducing the quality of services. The World Bank estimates that restoring service quality to pre-conflict levels would require an additional US\$2.5 billion in government expenditure.¹⁰⁵

Jordan

The flow of Syrian refugees into Jordan is estimated to have increased public expenditure by US\$0.9 billion between 2012 and 2013, which represents more than 1 per cent of Jordanian GDP.¹⁰⁶ Nearly half of that increase, or US\$0.4 billion, is due to increased security spending, in particular patrolling the border with Syria, transporting refugees and providing security at refugee camps.¹⁰⁸ A further US\$0.3 billion stems from increased demand for subsidised goods and services, namely,



Public service provision for Syrian refugees living outside of camps and local populations in Lebanon and Jordan is at breaking point.

electricity, gas, bread and water.¹⁰⁸ Increased demand for health, education and public works (waste management, city lighting and road maintenance) account for the remaining US\$0.2 billion.¹⁰⁹ At the same time, World Bank data points to a decline in health expenditure per capita by around 20 per cent between 2011 and 2013.¹¹⁰

In addition to these direct costs, the implicit cost associated with the deterioration in service quality between 2012 and 2013 is estimated at a further US\$0.6 billion.¹¹¹

Turkey

Turkey's finance minister estimates that

the cumulative cost of hosting Syrian refugees in Turkey reached US\$4.5 billion by 2014.¹¹² Around US\$2.3 billion of this came from the central government budget, with the rest reflecting increased expenditure by local authorities.¹¹³ In January 2016, the Turkish government reported that it had spent over 7 billion euro since the beginning of the crisis, noting particularly costs associated with health, education, food security and social and other technical services.¹¹⁴

97 World Bank, *Lebanon: Economic and Social Impact Assessment of the Syrian Conflict*, 63 and 104; USAID, *The Fiscal Impact of the Syrian Refugee Crisis in Jordan* (2014), 1, <http://www.frp2.org/english/Portals/0/PDFs/RFP%20Ads/2015/SYRIAN%20FISCAL%20IMPACT%20February%202014.docx.pdf>.

98 World Bank, *Lebanon: Economic and Social Impact Assessment of the Syrian Conflict*, 93 (estimate does not include defence spending).

99 Ibid., 63; USAID, *The Fiscal Impact of the Syrian Refugee Crisis in Jordan*, 1.

100 World Bank, *Lebanon: Economic and Social Impact Assessment of the Syrian Conflict*, 1.

101 Ibid., 125.

102 Ibid., 7.

103 Ibid., 63.

104 Ibid., 7.

105 Ibid.

106 USAID, *The Fiscal Impact of the Syrian Refugee Crisis in Jordan*, 8 (estimate does not include social-welfare spending).

107 Ibid., 36.

108 Ibid., 8.

109 Ibid.

110 World Bank, *World Development Indicators*, Jordan.

111 USAID, *The Fiscal Impact of the Syrian Refugee Crisis in Jordan*, 8.

112 World Bulletin, *Turkey Spends \$4.5 Billion on Syrian Refugees* (2014), <http://www.worldbulletin.net/turkey/147700/turkey-spends-45-billion-on-syrian-refugees-updated>.

113 Ibid.

114 This is based on the official figures provided by the Turkish government: European Commission, *Humanitarian Aid and Civil Protection, Turkey: Refugee Crisis, ECHO Factsheet* (January 2016), 2, http://ec.europa.eu/echo/files/aid/countries/factsheets/turkey_syrian_crisis_en.pdf.



Children in the Bekaa Valley, Lebanon gather around a fire of burning plastic and rubbish to stay warm.

6. WIDER ECONOMIC AND SOCIAL COSTS

The combination of the direct effects of conflict, financial constraints and lost economic resources resulting from falling or negative growth rates has had a profound impact on the well-being of people and communities in the countries concerned. With the current funding requirements for the 2016 Syria Humanitarian Response Plan and the 2016–17 Regional Refugee and Resilience Plan standing at US\$3.2 billion and US\$4.5 billion¹¹⁵ respectively, there can be no doubt of the severity of impact these direct effects have had on the well-being of those affected across the region.

The loss of human capital, through poor education and health will inflict long-term damage on productivity and economic growth in the region. Without the means for children to receive support, rebuild their lives and gain essential skills, conditions risk being created that will transmit poverty across generations, fuel social instability and undermine prospects for recovery.¹¹⁶

Direct and indirect impacts on education services resulted in the equivalent of 24.5 million years of lost schooling by the end of 2015.¹¹⁷ Children who no longer either attend school or receive any informal education opportunities not only lose the immediate opportunity to learn academic and social skills, but their

productivity and potential lifetime income also decline correspondingly.¹¹⁸ Most recent estimates assigning monetary value to the economic cost of dropout from basic and secondary education in Syria find that the reduction of lifetime earnings derived from children no longer in school runs into millions of dollars.¹¹⁹

Children under 5 are among the most vulnerable to physical trauma, injuries, communicable diseases, lack of immunisations and malnutrition. Malnutrition amongst children under 2 can cause irreversible damage to their growth and development potential. Children under 5 with severe acute malnutrition are nine times more at risk of mortality and morbidity than healthy children.¹²⁰

In relation to Syria, populations of Syrian refugees in neighbouring countries, and the neighbouring countries themselves, where the influx has led to pressure on public schools and hospitals, these wider costs reduce the overall quality of education and health care for all vulnerable groups, including local communities.

“Living in debt is better than seeing our children starve... We say thank God, because we are not starving, we are still alive.”

– Zakiya, a Syrian mother, aged 42.

115 Regional Refugee and Resilience Plan 2016–2017 (3RP), *Strategic Overview*, <http://www.3rpsyriacrisis.org/the-3rp/strategic-overview/>.

116 Overseas Development Institute, *Living on Hope, Hoping for Education: The Failed Response to the Syrian Refugee Crisis* (September 2014), <http://www.odi.org/publications/8829-syria-refugee-education-crisis-hope>.

117 Syrian Centre for Policy Research, *Confronting Fragmentation*, 51.

118 UNICEF, *Economic Loss from School Dropout due to the Syria Crisis: A Cost Benefit Analysis of the Impact of the Syria Crisis on the Education Sector* (December 2015), 5, http://learningforpeace.unicef.org/wp-content/uploads/2016/02/Cost-benefit_analysis_report_English_final.pdf.

119 Ibid., 12.

120 OCHA, *2016 Humanitarian Needs Overview: Syrian Arab Republic* (December 2015), <http://reliefweb.int/report/syrian-arab-republic/2016-humanitarian-needs-overview-syrian-arab-republic>.

6.1 SYRIA

Prior to the conflict, government spending on education was around 20 per cent of total government outlays, in line with UNESCO guidelines.¹²¹ While actual spending data following the onset of conflict is not available, it is likely, in light of the resource constraints reported in section 0, that spending has reduced significantly.

Spending reductions due to conflict directly affect access to education; schools and learning facilities have been rendered unsafe, overcrowded and under resourced. One in four schools have been damaged, destroyed or is used to shelter displaced people, and over a fifth of teachers have fled the country.¹²²

Exposure to violence and forcible recruitment deter children from undertaking the journey to school. Internally displaced children and adolescents find it difficult to access education in new locations because they may lack the appropriate documentation and classes are usually at capacity.¹²³

Taken together, these various factors have had a dramatic impact on educational indicators. Syria fell from 124 to 173 of 187 countries in terms of education under the Human Development Index.¹²⁴

More than two million children do not attend school, and 5.7 million are in need of education assistance. In 2015, 400,000 more children were out of school than in 2014.¹²⁵

Total enrolment in pre-primary, primary and secondary school has decreased by 44 per cent, from 5.5 million children

in 2010 to 3.1 million in the 2014–15 school year.¹²⁶ In areas most heavily affected by the conflict, such as Idlib and Aleppo, attendance has fallen below 30 per cent.¹²⁷ Only 17 per cent of Syrian children living in informal camps in Syria are in school.¹²⁸

As with education, access to health care has been affected by a combination of financial resource constraints and the destructive effects of the conflict on health infrastructure. Health spending in real per capita terms fell by over 20 per cent between 2011 and 2013.¹²⁹ More recent data is not available, but it is likely that spending has fallen further as the effects of the conflict on the resource base have had further effect.

Combined with falls in spending, attacks on health facilities and risks faced by health personnel have led to only 43 per cent – under half of those functioning pre-conflict – of Syrian hospitals being fully functional, whilst 15,000 doctors – half the total number of certified physicians – have fled the country. Deterioration in water and sanitation systems has further increased exposure to disease and illness, particularly for those internally displaced.

121 World Bank, *World Development Indicators database*, 2015.

122 UNICEF, *Education under Fire* (2015), 3, <http://www.unicef.org/mena/Education-Under-Fire-English.pdf>.

123 Save the Children, *Futures under Threat* (2014), 9, <http://www.savethechildren.org.uk/resources/online-library/futures-under-threat>.

124 Syrian Centre for Policy Research, *Confronting Fragmentation*, 43.

125 OCHA, *2016 Humanitarian Needs Overview: Syrian Arab Republic* (December 2015).

126 Ibid.

127 UNICEF USA, *Infographic: Syrian Children under Siege* (2014), <https://www.unicefusa.org/stories/mission/emergencies/conflict/syria/infographic-syrian-children-under-siege/582>.

128 Save the Children, *Futures under Threat*, 10.

129 World Bank, *World Development Indicators* (2015).



This World Vision-supported hospital, specialising in maternal, newborn and children's health, was affected by one of the many attacks against hospitals in Aleppo Governorate, northern Syria in February 2016.

The cumulative impact on health indicators has been profound. By the end of 2015, the health index decreased by 30.3 per cent from 2010, placing Syria among the worst countries in the world in terms of health according to the Human Development Index, at 174 out of 195 countries.¹³⁰

In 2010, estimated life expectancy at birth was 70.5 years. In 2015, estimated life expectancy at birth was 55.4 years.¹³¹ 45,000 pregnant women are at risk of developing complications, which could lead to a rise in infant mortality.¹³²

Over 2 million children under 5 are malnourished or at risk of malnutrition.¹³³ Of boys and girls aged 6–59 months, 3.16 million are in need of preventive and curative nutrition services. Of these, an estimated 86,000 children are acutely malnourished.¹³⁴

Sharp drops in child immunisation rates, from 90 per cent before the conflict began to 50 per cent in 2014, have increased the incidence of water-borne diseases such as typhoid and diarrhoea.¹³⁵ Polio re-emerged in 2013 for the first time in 14 years.¹³⁶

6.2 NEIGHBOURING COUNTRIES

Syrian refugees, particularly over 2 million Syrian children living in neighbouring countries as refugees, have faced multiple constraints in accessing basic services. This in part reflects the constraints these services were already under prior to the conflict and the refugees fleeing the violence. While some attempts have been made to meet this added demand through foreign grants,¹³⁷ investments

“ We ran into the hospital's shelter. After the attack we couldn't go up because we could still hear the sound of planes. We were told it was a missile. The sound of the plane was loud and scary, and destruction was huge.”

– A World Vision midwife working in the hospital (pictured above) at the time of the attack.

130 Syrian Centre for Policy Research, *Confronting Fragmentation*, 43.

131 Ibid.

132 World Health Organisation, *Syria Situation Report September 2015* (2015), 1, <http://reliefweb.int/report/syrian-arab-republic/syria-crisis-monthly-humanitarian-situation-report-september-2015-syria>.

133 New Internationalist Blog, *Syria's Shameful Healthcare Quagmire* (2015), <http://newint.org/blog/2015/03/17/syria-healthcare/>.

134 OCHA, *2016 Humanitarian Needs Overview: Syrian Arab Republic* (December 2015).

135 New Internationalist Blog, *Syria's Shameful Healthcare Quagmire*.

136 UN, *Urgent Action Needed to Protect Children against Polio in Syria, Iraq and Region* (2014), <http://www.un.org/apps/news/story.asp?NewsID=48325#.Vng877FFDIU>.

137 3RP, *Progress Report* (June 2015), <http://www.3rpsyriacrisis.org/wp-content/uploads/2015/06/3RP-Progress-Report.pdf>.

in the education and health sectors have been underfunded compared to other humanitarian components in the response of the international community.¹³⁸ The consequences for the education and health conditions of refugee populations have been severe:

Only 48 per cent of refugee children from Syria, or 667,000 school-age children, are accessing education opportunities, while close to 52 per cent, or 708,000 school-age children, were out of school in the 2014–15 school year.¹³⁹

Reduced quality of care and limited support to meet health care needs have resulted in increased morbidity and mortality, especially among children under 5.¹⁴⁰ There is a general shortage of skills and capacity to address the physical and mental health needs of those affected by conflict.

Many refugee children report living in unsafe tents, camps and small, narrow rooms in remote areas, away from markets and stores.¹⁴¹ These cramped living conditions coupled with low immunisation rates and lack of access to water and sanitation combine to result in a high incidence of disease. The increase in communicable diseases such as typhoid, hepatitis and measles poses a direct risk to the health of both refugee and host-community families.

Previously barred from formal employment, refugee families are often under acute financial pressure. The World Bank reports that nine in ten refugees living in Jordan and Lebanon can be considered poor, measured on

the basis of the poverty lines used in these countries.¹⁴² The vulnerability of refugees to poverty and their lack of access to services and labour markets has meant, amongst other things, that parents are sending their children to work or entering them into marriage at a young age just to help the family survive, making them less likely to return to school. The main child protection risks for refugees are child labour, early marriage, recruitment into armed forces and groups, family separation, lack of birth registration, and violence in homes, schools and communities.¹⁴³

Lebanon

Services in Lebanon have struggled to cope with the spillover effects of conflict. Prior to the conflict, capacity constraints in the public education sector were already evident. Overcrowding is an issue, as the Lebanese public school system, designed to accommodate around 300,000 Lebanese children, struggles to accommodate the 400,000 Syrian refugees in need of an education.¹⁴⁴ In Lebanon, only 20 per cent of Syrian children are formally enrolled in school, whilst nearly 70 per cent are not receiving any form of education whatsoever.¹⁴⁵ More than 204,000 Syrian children (5 to 17 years), remain out of school.¹⁴⁶ Language differences also act as a major barrier to enrolment, as Lebanese schools teach maths and sciences in either English or French, which very few Syrian children understand.

The United Nations has warned that the pressure on primary health centres and hospitals in Lebanon is such that it

138 Regional Refugee and Resilience Plan 2016–2017 (3RP), *Strategic Overview*.

139 Joint Agency Briefing Paper, *Right to a Future*.

140 3RP, *Progress Report*.

141 World Vision International, *Stand with Me: Ending the War on Syria's Children* (November 2013), <http://www.wvi.org/jordan/publication/stand-me-ending-war-syrias-children>.

142 World Bank, *The Welfare of Syrian Refugees: Evidence from Jordan and Lebanon* (2015), <http://www.worldbank.org/en/news/feature/2015/12/16/welfare-syrian-refugees-evidence-from-jordan-lebanon>.

143 Regional Refugee and Resilience Plan 2016–2017 (3RP), *Strategic Overview*.

144 Save the Children, *Futures under Threat* (2014), 21.

145 3RP, *Progress Report*.

146 Ibid.

threatens to collapse the health-care system if not reinforced with additional staff numbers and capacity building, equipment and space.¹⁴⁷ The overall increased demand has driven up costs and generated medication shortages.¹⁴⁸

Varying degrees of access to primary health-care services, combined with overcrowding, substandard housing and limited access to safe water and sanitation, have heightened the risk of communicable disease for vulnerable refugees and local communities alike.¹⁴⁹ Lebanon has seen a sharp surge in communicable diseases since the beginning of the conflict. The incidence of measles increased from nine cases in 2012 to 1,456 cases in 2013; there also has been a notable increase in cases of hepatitis A and mumps in the past two years.¹⁵⁰ Diseases previously unknown to Lebanon, such as leishmaniasis, have emerged since the conflict.¹⁵¹

Jordan

In Jordan, where more than half the registered refugees are children under the age of 18, 50 per cent of refugee children are formally enrolled in the public school system and a further 35 per cent are receiving informal education.¹⁵² This strain on the public education system has compromised the quality of education provided and delayed reforms that were under way by the Jordanian government. Before the onset of the conflict in Syria, Jordan had made progress in reducing class sizes and eliminating the practice of 'double shifts' in overcrowded schools. In 2013,

however, 67 schools reintroduced second shifts to absorb an additional 34,000 Syrian refugees.¹⁵³

Funding constraints have led the government to introduce user fees for Syrian refugees in line with those charged to uninsured Jordanians. This decision has reportedly had a negative impact on access of vulnerable Syrians to public health services, including hospital-based delivery care.¹⁵⁴ The conflict has also increased the incidence of disease in Jordan. Measles, eradicated in Jordan in 2008, has resurfaced among Syrian refugee communities, whilst the incidences of hepatitis, tuberculosis and leishmaniasis have also increased.¹⁵⁵ Activities relating to infant and young child feeding remain critically underfunded, compromising the optimal growth and well-being of refugee children.¹⁵⁶

Turkey

In Turkey language barriers have affected the ability of refugees to access education and health services, as refugees struggle to understand the processes by which to use services they may be entitled to. While around 90 per cent of Syrian refugees living in refugee camps in Turkey regularly attend school, the majority (87 per cent) of Syrian refugees in Turkey live outside refugee camps, where three in four school-aged children are not in school.¹⁵⁷ As of August 2015, in Turkey, there were over 663,000 registered Syrian refugee school-age children, of whom an estimated 433,000 were out of school,¹⁵⁸

147 3RP, *Progress Report*.

148 World Bank, *Lebanon: Economic and Social Impact Assessment of the Syrian Conflict*, 63.

149 Regional Refugee and Resilience Plan 2016–2017 (3RP), *Strategic Overview*.

150 World Bank, *Lebanon: Economic and Social Impact Assessment of the Syrian Conflict*, 63.

151 *Ibid.*, 70.

152 UNICEF, *Education Under Fire* (2015), 3.

153 USAID, *The Fiscal Impact of the Syrian Refugee Crisis in Jordan*, 16.

154 *Ibid.*

155 *Ibid.*, 21–22.

156 3RP, *Progress Report*.

157 Human Rights Watch, 'When I Picture My Future, I See Nothing' – Barriers to Education for Syrian Refugee Children in Turkey (2014), <https://www.hrw.org/report/2015/11/08/when-i-picture-my-future-i-see-nothing/barriers-education-syrian-refugee-children>.

158 Regional Refugee and Resilience Plan 2016–2017 (3RP), *Strategic Overview*, 34.



Ghadeer* refuses to wear her wedding ring on her left hand

Photo credit: Christopher Lee

'I didn't want to get married. I was too young.'

Ghadeer* was just 13 years old when her father arranged for her to marry her cousin.

'Many times I saw how men were looking at my daughter, and I was afraid she would get abused. Once a man followed her home to our tent. Thankfully, I was home,' he says. 'I knew her cousin wanted to marry her, so I forced her because I was afraid to lose her.'

It's a decision he now deeply regrets. Ghadeer's now-husband and mother-in-law beat her, and she is often covered in bruises. 'I feel very guilty. My wife is angry with me. I swear that I wanted to protect her. I did not know this would happen,' he says. 'Sometimes, I think of killing myself as I am the one responsible for this marriage.'

As if to agree, his wife chimes in, 'He would not listen. I begged but he would not listen. She was too young.'

Ghadeer, now 15 years old, visits her parents and younger siblings once a week in their informal tented settlement in Lebanon's Bekaa Valley. She says it's the only time she feels happy.

'I didn't want to get married. I was too young. I miss my family, friends and school. I asked my husband if I could go back to school, but he said no,' says Ghadeer. 'I wanted to be a lawyer. If I got the chance now, I'd specialise in making sure other girls do not have to experience what I have.'

Ghadeer fears becoming pregnant, saying she is not ready psychologically or physically. 'I have to look after my husband's large family. I work very hard, and I'm tired. I just want to go back to Syria and rest.'

Ghadeer's mother says prior to her marriage she was a warm and happy child who loved to eat candy-floss. Now she is sombre and withdrawn.

To ensure that other parents don't push their daughters into similar circumstances, Ghadeer's mother now serves on World Vision's Child Protection Committee, raising awareness in refugee settlements about the negative impact of early marriage.

*Name has been changed to protect her identity.



In 2015, a sharp increase in refugee arrivals into Turkey exacerbated pressure on existing health services. World Vision provided kits for babies and young children which included sanitation and hygiene items.

although this is likely to have risen since then as overall refugee numbers have increased as of February 2016.

The health sector in Turkey has come under significant strain, with clinics reporting a 30–40 per cent increase in patient load.¹⁵⁹ Turkey hosts a large number of Syrian refugees injured in the conflict who require medical attention; as of October 2014, about 250,000 Syrian refugees received in-patient care, and more than 200,000

patients underwent operations.¹⁶⁰ Key informant interviews undertaken by World Vision indicated that the Syrian refugees fleeing the violence – who are disproportionately likely to be suffering from distress or mental health issues – have strained a system already struggling to provide psychosocial support. Interviewees explained that even in Turkey such services were not widely available before 2011.

¹⁵⁹ Regional Refugee and Resilience Plan 2016–2017 (3RP), *Strategic Overview*.

¹⁶⁰ 3RP, *Regional Refugee and Resilience Plan 2015–16: Turkey* (2015), 53.

¹⁶¹ The No Lost Generation initiative was launched by a coalition of partners, of which World Vision is one, in 2013 to call for investment in expanding access to learning, and providing a protective environment and broadening opportunities for children and adolescents in Syria and the neighbouring countries. The initiative has generated critical funding to help meet the direct educational and psychological needs and rights of vulnerable children. It also advocates for stronger child-focused policies in host countries in order to reach more deeply into communities under immense strain as a result of the Syria crisis.

‘There is no choice. I must bring money’

Twelve-year-old Radwan's family fled its home in Daraa, Syria, three years ago.

Unable to work in Jordan, his father returned to Syria in 2014 and was killed in August 2015. His mother is ill with diabetes and unable to afford medicine.

Radwan works long hours as a day labourer on construction sites in Irbid to buy vegetables for his family and pay the rent on their small apartment. It is backbreaking work. ‘I make the cement in a bucket and then go fetch the blocks. There is no choice. I must bring money. This is the only way.’

Until January 2016, Radwan had not stepped foot in a classroom for more than four years. Now, he is one of almost 1,000 Syrian and Jordanian children taking part in a remedial education programme run by World Vision in Jordan.

It's not a perfect solution by any means. These are catch-up lessons, just four hours long, not the comprehensive education Radwan, and children like him, deserve.

‘I want to learn to read and write properly, so I can teach other children. I'd like to be a teacher if I am able.’

Between work, school and caring for his mother and younger siblings, Radwan has little time left to be a child. ‘I am always tired. I wish to have a normal life without problems.’

In addition to the remedial education programme, World Vision also runs a No Lost Generation¹⁶¹ programme in 28 more schools throughout Jordan. The classes serve more than 2,000 students.



Radwan recites the letters of the alphabet posted on the classroom wall.

7. TECHNICAL ANNEX

The impact of conflict is calculated by comparing the actual GDP growth rates with benchmark growth rates. These growth rates are applied onward from 2010 to show how GDP per capita evolves in the actual and counterfactual scenarios. The difference between the two is attributed to the effect of conflict.

7.1 GENERAL APPROACH

The benchmark growth rates are calculated using a pooled panel data from over 120 countries. This explains the growth rate as a function of country characteristics, as well as a series of time dummies that control for global macroeconomic conditions prevailing each year. This allows for countries to grow at different rates, depending on their characteristics, and for there to be common shocks each year. This is consistent with the literature on convergence, which holds that less-developed countries have more growth potential and will grow faster than already-developed countries.

The choice of country characteristics for control has been informed by academic literature on economic growth. The first step was to identify potentially relevant variables in the World Bank World Development Indicators and then to explore the coverage of each variable across countries and, over time, to work out the potential scope of the dataset. It is important to note that there are trade-offs between the time period, range of countries and range of variables that can

be included, on one hand, and ensuring that the time series does not have gaps.¹⁶² Further gaps in the data are addressed using the IMF World Economic Outlook and Total Economy Database.

A general-to-specific approach is then used to identify which of these variables should be included in the estimation. This starts with the full range of variables in the model, and one by one drops those that are statistically insignificant, so that only the relevant variables are retained.

This produces the following model:¹⁶³

$$\text{Growth GDP capita}_{it} = a + (\text{dummy}) \text{ year}_t + \text{Gross capital formation}_{it} + \text{Industry share}_{it} + \text{Services share}_{it} + \text{Literacy rate}_{it} + \log \text{GDP per capita}_{it} + \text{Savings rate}_{it} + (\text{dummy}) \text{ Low income country}_i + (\text{dummy}) \text{ Lower middle income country}_i + \text{Trade share of GDP}_{it} + u_{it} \text{ for country } i \text{ in year } t.$$

Results for the model are shown in Table 4. As the goal is to forecast GDP growth for Syria, Lebanon, Jordan and Turkey – and to avoid having the actual outcomes for these countries affect the estimates – these countries are excluded from the estimation sample, along with Iran, Iraq and Israel.

¹⁶² The sample period runs from 1995 to 2015, covering 123 countries. Countries with significant gaps were dropped from the dataset – predominantly sub-Saharan Africa, smaller countries and dependencies.

¹⁶³ Insignificant variables in the wider dataset dropped from the model are manufacturing share of GDP, natural resource rents (i.e. the total revenue that can be generated from extracting natural resources, less the costs of extraction), share of GDP, unemployment rate and population density.

Table 4. Basic model – impact of variables on GDP per capita

| Variable | Coefficient | T-statistic |
|-----------------------------------|-------------|-------------|
| 1996 dummy | -0.0078 | -1.35 |
| 1997 dummy | 0.0018 | 0.41 |
| 1998 dummy | 0.0051 | 1.05 |
| 1999 dummy | -0.0042 | -0.87 |
| 2000 dummy | -0.0026 | -0.64 |
| 2001 dummy | 0.007 | 1.79 |
| 2002 dummy | -0.002 | -0.57 |
| 2003 dummy | -0.0022 | -0.55 |
| 2004 dummy | 0.0092 | 2.24 |
| 2005 dummy | 0.0231 | 5.67 |
| 2006 dummy | 0.0175 | 4.53 |
| 2007 dummy | 0.0228 | 5.48 |
| 2008 dummy | 0.0192 | 4.64 |
| 2009 dummy | -0.0039 | -0.96 |
| 2010 dummy | -0.0406 | -8.51 |
| 2011 dummy | 0.0045 | 1.3 |
| 2012 dummy | 0.0021 | 0.56 |
| 2013 dummy | -0.004 | -1.21 |
| 2014 dummy | -0.0036 | -1.08 |
| 2015 dummy | -0.0016 | -0.57 |
| Gross capital formation | 0.1587 | 9.54 |
| Industry share | -0.0868 | -5.4 |
| Services share | -0.1061 | -7.34 |
| Literacy rate | 0.032 | 4.68 |
| Log GDP per capita | -0.005 | -2.89 |
| Savings rate | 0.022 | 1.97 |
| Low-income country dummy | -0.0213 | -3.77 |
| Lower-middle-income country dummy | -0.0072 | -2.04 |
| Trade share of GDP | 0.0023 | 1.67 |
| Constant | 0.0916 | 5.3 |

Number of observations – 2,418, R-squared 0.24

Source: Frontier Economics analysis of World Bank, UNHCR and Total Economy Database data

Multiplying these coefficients by the country characteristics gives the estimate of GDP per capita growth for that year. For example, a country with gross capital formation of 23 per cent, 30 per cent industry, 60 per cent services, 80 per cent literacy, US\$5,000 GDP per capita, 20 per cent savings rate, 50 per cent trade as share of GDP and classified as lower-middle income would have an estimated growth rate of 4.1 per cent in 2000, but only 0.3 per cent in 2010. The 2011–15 forecasts for Syria, Lebanon, Jordan and Turkey are derived in exactly this fashion. Note that the 2011–15 predictions for these countries use 2010 characteristics instead of 2011–15 actuals, as the latter may themselves be affected by the onset of conflict (for example, conflict lowers the savings rate, which would in turn lower the benchmark).

The benchmark growth rates will comprise an average global macroeconomic component and a country characteristics component.¹⁶⁴

Many countries have quite volatile growth trajectories, undergoing sharp growth or contraction in one year, which is not explained by the growth drivers and is not correlated with patterns in other countries. It is not straightforward to control for such country-specific shocks in the context of a general model, as these shocks by their very nature are idiosyncratic and do not follow uniformly from such aggregate data. Hence, the basic regression model explains 24 per cent of variation in growth rates, with the other 76 per cent still unexplained.

7.2 MODEL REFINEMENTS

A number of refinements to the model that improve the 'goodness of fit' were explored. While these refinements do

not substantially alter the results, they do shed further light on the question of model fit and the reasons for volatility in growth rates. Two sources contributing noise to the model – persistent deviations in growth rate and year-on-year noise – are discussed. Then, estimates of the performance relative to benchmark in the conflict period under a number of different models are presented.

Persistent deviations in country-level performance

Some countries show sustained periods for which growth is higher or lower than might be expected. Including lag terms allows for persistence in GDP growth over time. This indicates that, on average, 40 per cent of GDP performance will persist from year to year. Including the lag terms markedly improves the fit of the model, so that 39 per cent of the variation can be explained in the model.

However, the effect of this 'refinement' on the accuracy of predictions varies by country, depending on the degree of persistence in growth rates. Looking in detail at each country's growth pattern, some show much more persistence than others. As may be expected, the improvement in model fit comes from better predicting outcomes in the countries with persistent growth rates. In such cases the growth rate observed one year gives a reliable signal of likely growth the next year. But if growth rates are more volatile, this signal becomes weaker.

This raises the question of how much of the pre-conflict performance might have been expected to continue into the 2011–15 period. Are the pre-conflict deviations trends that would have continued, or are they just 'blips'? If the

latter, then modelling persistence effects is not justified.

For countries with non-persistent growth rates the lag model is actually worse at predicting outcomes. Syria, Jordan and Turkey all have non-persistent growth paths, although Lebanon shows a greater degree of persistence, perhaps reflecting the effects of sustained political uncertainty or reconstruction from previous conflicts.

Year-on-year noise

There are a number of reasons why the yearly country data of the World Development Indicators may be inaccurate. If there are issues regarding the date at which income is recognised or there are revisions to a country's accounting methodology kicking in only at a certain year, this may give sharp movements in the year-on-year growth rate. This will add noise in the model, which will not be explained by the control variables. Aggregating across years will reduce this noise and improve the model fit. Moving from an annual model to a model estimated on five-year periods improves the fit from 24 per cent to 29 per cent. If a lag term is added (showing performance in the previous five-year period), the model fit increases

to 43 per cent. A different model, in which the dependent variable is the change in average growth rate between 2006–10 and 2011–15, was also used, as was control for average growth in the period 2006–10 to capture any mean reversion effects. This gives similar results, but with a model fit of 64 per cent. Again, the appropriateness of extending previous performance out to subsequent periods may vary by country.

Country impacts under different models

Table 5 shows how country performance relative to benchmark varies under different model specifications. As is clear, the various modelling refinements improve the fit of the model. However, they have relatively minor impact on estimates of country performance, suggesting that model fit is not a particular issue. Impacts are in the range of -2.6 per cent to -2.3 per cent for Jordan; -5.6 per cent to -4.9 per cent for Lebanon; and -11.7 per cent to -10.3 per cent for Syria – all firmly negative. There is more uncertainty regarding Turkey, with both positive and negative impacts shown.

Table 5. Country impacts under different model specifications

| Model | R-squared | Average performance relative to benchmark (2011–15) | | | |
|--|-----------|---|---------|--------|--------|
| | | Jordan | Lebanon | Syria | Turkey |
| Basic model | 0.24 | -1.7% | -4.9% | -11.6% | 0.9% |
| Annual model with 1-year lag | 0.38 | -1.4% | -5.2% | -10.6% | -0.2% |
| Annual model with 3 lags | 0.39 | -1.5% | -5.0% | -10.3% | 0.1% |
| 5-year model | 0.29 | -1.5% | -4.9% | -11.7% | 0.8% |
| 5-year model with lags | 0.43 | -1.5% | -5.5% | -11.4% | 0.9% |
| 5-year difference model with lag (2006–15) | 0.64 | -1.6% | -5.6% | -10.3% | 0.4% |

Source: Frontier Economics analysis of WDI, WEO, TED and UNHCR data

¹⁶⁴ Note that this model assumes that the effects of growth drivers are constant over time and that global shocks have similar impacts across countries. It is possible that some drivers may decline or increase in importance over time if, for example, some sectors undergo particular bouts of innovation at certain times, giving greater scope for growth. It is also possible that in addition to global shocks, there may be temporal shocks common to sub-groups of countries, for example, the Eurozone crisis and the Asian financial crisis in 1999.

7.3 NOTE ON DATA SOURCES

The main data source used in the analysis is the World Bank's World Development Indicators (WDI), which provides data on GDP, population and a number of control variables used to estimate counterfactual GDP. The Total Economy Database (TED) was used to fill in some gaps in the GDP data, and the UNHCR data to construct a refugee-inclusive population measure. GDP and population sources are discussed below.

GDP data

The main GDP data comes from the WDI dataset. The variable of interest is 'NY_GDP_PCAP_PP_KD', which is GDP per capita, PPP (constant 2011 international \$). Where there are gaps, this is supplemented with other data on constant GDP per capita. This data typically extends up to 2014.

The most recent GDP data is to be found in the TED, which includes GDP estimates for 2015. The 2015 data was incorporated by using the 'GDP-Capita EKS' variable from TED, which measures GDP per capita in 2014 US\$ (converted to 2014 price level with updated 2011 PPPs). The growth rates in this series are applied to the NY_GDP_PCAP_PP_KD series to create an extended series of real GDP per capita that is measured on a consistent basis over time.

For Syria, the NY_GDP_PCAP_PP_KD series is not reported at all in the WDI. Instead, we use 'NY_GDP_PCAP_KD' - GDP per capita (constant 2005 US\$), which is available up to 2007. Note that growth rates in NY_GDP_PCAP_PP_KD and in NY_GDP_PCAP_KD are the same; all that differs is the \$/PPP base.

The series is extended up to 2015 by using the using growth rates from the TED data and re-basing it into 2011 PPP-adjusted dollars for comparability with other countries. So, essentially the GDP data for Syria in the conflict period is the TED data. As can be seen in Figure 9, the TED and WDI series are very similar over time. Therefore, there should not be any issues involved with using the TED data.

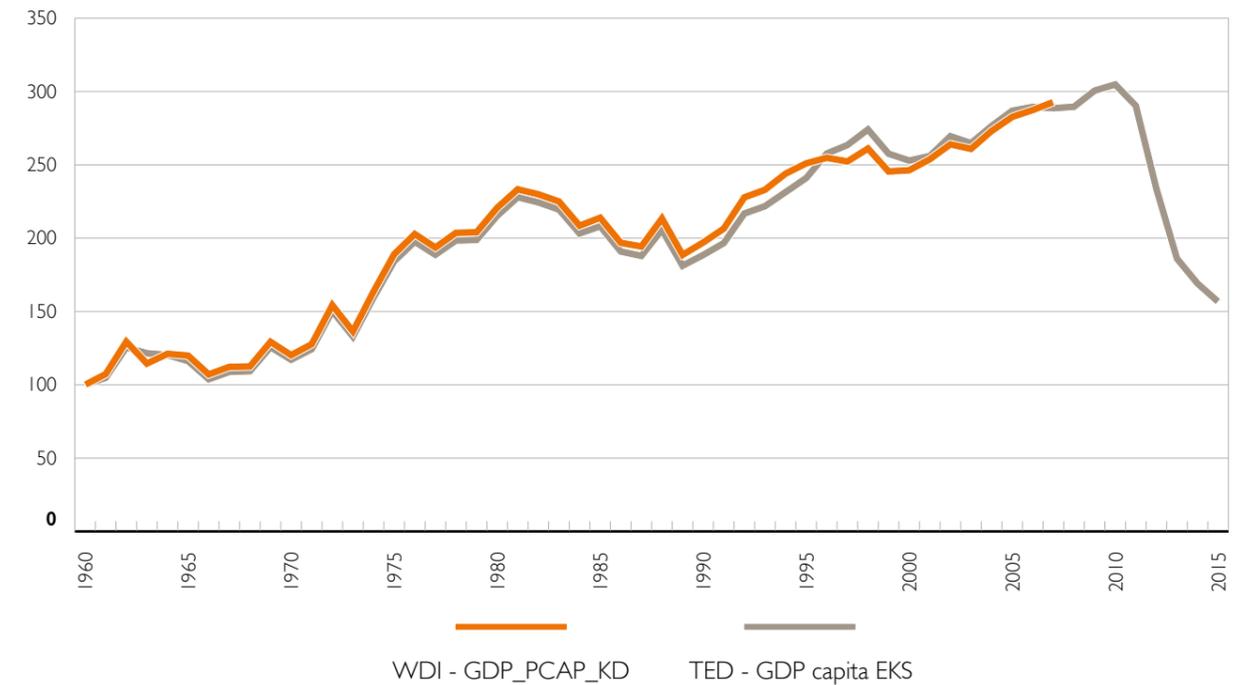
Population data

Population data is taken from the 'SP.POP.TOTL' measure in the WDI. This measure counts all residents regardless of legal status or citizenship, but excludes refugees not permanently settled in the country of asylum, who are generally considered part of the population of their country of origin. This series goes up to 2014; 2015 data are created by applying 2014 growth rates to 2014 totals.

The UNHCR Refugee Population Statistics are then used to construct a refugee-inclusive measure of population. This lists refugee populations for each country of origin and country of residence. Refugees originating from a country are subtracted from the origin country's population and added to the population of the country they are residing in. Refugee-inclusive GDP per capita numbers and associated growth rates are calculated by dividing through the GDP series derived above by these population figures.

Counterfactual population figures are derived by assuming no further changes in refugee population from 2010 onwards.

Figure 9. Comparison of WDI and TEC data sources for Syrian GDP



Source: Frontier Economics analysis of World Bank, UNHCR and Total Economy Database data

World Vision is a Christian relief, development and advocacy organisation dedicated to working with children, families and communities worldwide to reach their full potential by tackling the causes of poverty and injustice. World Vision is dedicated to working with the world's most vulnerable people. World Vision serves all people regardless of religion, race, ethnicity or gender.

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