

WORKING PAPER

JOBS MAKE THE DIFFERENCE

*Estimating job creation potential of the 3RP
Regional Refugee & Resilience Plan*

Tobias Schillings

University of Oxford



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WORKING PAPER #46

***JOBS MAKE THE
DIFFERENCE
ESTIMATING JOB CREATION
POTENTIAL OF THE 3RP
REGIONAL REFUGEE &
RESILIENCE PLAN***

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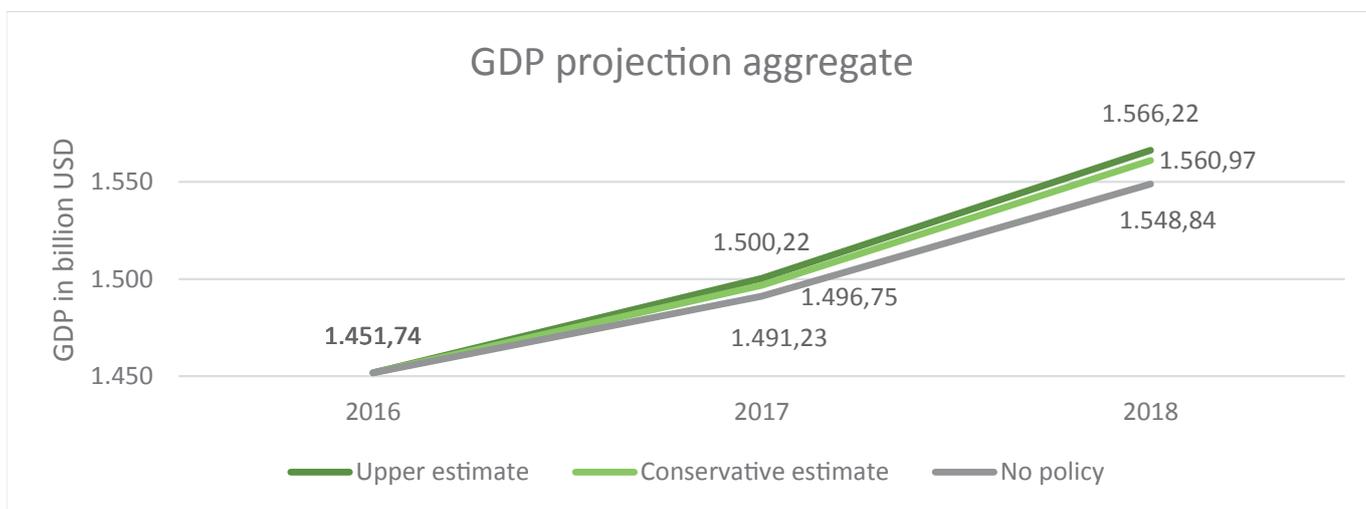
EXECUTIVE SUMMARY

With currently 5.6 million registered Syrian refugees being hosted by neighbouring countries and over six million internally displaced within Syria, creating economic opportunities has become a central component of the resilience approach in response to the crisis. Acknowledging the destructive impact of the conflict on livelihoods and economic resources, the international community committed to creating 1.1 million jobs for refugees and host communities by the end of 2018.

The core response of the international community is the Regional Refugee and Resilience Plan (3RP), which is based on plans developed under the leadership of the relevant national authorities – namely, the Arab Republic of Egypt, the Republic of Iraq, the Hashemite Kingdom of Jordan, the Lebanese Republic, and the Republic of Turkey. The 3RP combines humanitarian and development elements, spans eight different sectors, including livelihoods, and is supported by a total annual funding appeal of US\$4.6 billion for 2017.

create additional economic effects. Using latest academic research to quantify the size of these multipliers in the respective countries, the paper projects GDP growth for 2017 and 2018 using three scenarios. The baseline ‘no policy’ projection relies on the ‘World Bank Global Economic Prospects’ forecast and describes the scenario without the 3RP intervention. The ‘conservative’ and ‘upper’ estimates incorporate the additional growth impact of the response plans, weighted by the relevant multipliers. The below graph shows the aggregate impact of the regional response plan by summing over all five countries.

The projection indicates that the 3RP can have a significant effect on economic growth in the region, in the optimistic scenario more than doubling the initial investment. The impact differs significantly by country, given the heterogeneous size of the economies and funding appeals. Jordan and Lebanon are expected to experience the strongest momentum in economic growth, with projected real GDP growth pushed by up to 9 percentage points.



This paper estimates the macroeconomic impacts of the 3RP response plan in 2017 and 2018. Based on the funding appeal, the fiscal stimulus and its impact on economic growth and job creation is projected on the national level. In the absence of quality micro-level data, the study relies on using macroeconomic indicators, namely Fiscal Multipliers and Okun’s law, to provide high-level estimates. Fiscal Multipliers capture the spill-over effects of public investments. For example, building a refugee camp creates income not only for the construction company but also for the suppliers of materials and labour. This income is then spent on other goods and services which in turn

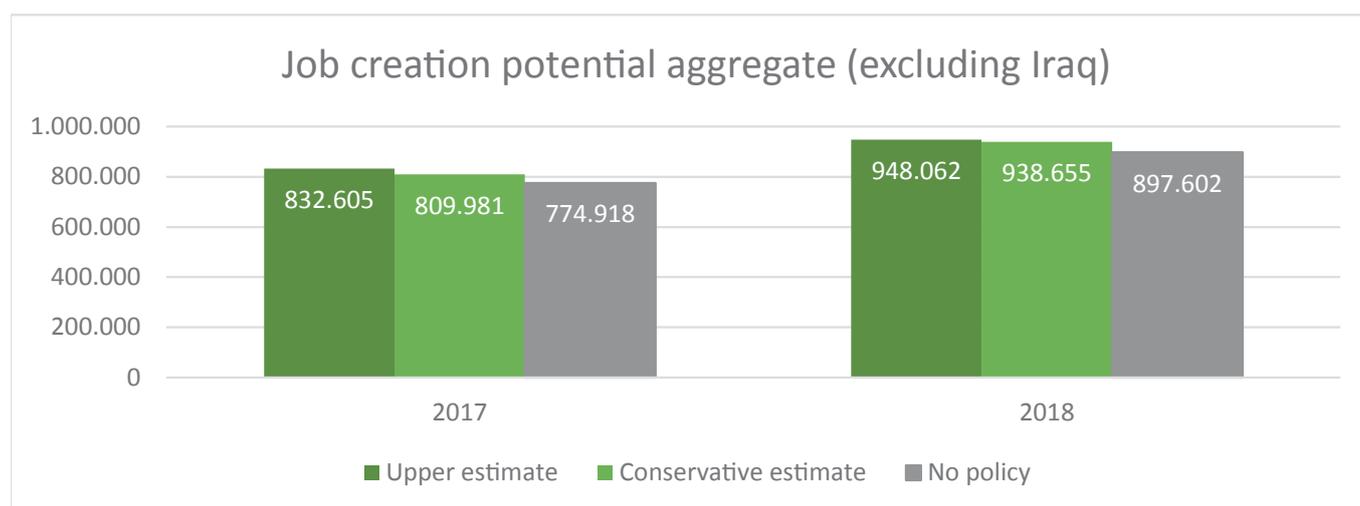
In the second step of the estimation, the projected economic growth is translated into job creation using a macroeconomic indicator, the so-called Okun’s law. The law describes the empirical relationship between real GDP growth and the change in unemployment rate. It serves as an approximation for the expected change in unemployment for a 1 percent change in GDP. The relevant coefficients are estimated based on data from 2001 to 2016 using ILO and World Bank sources. The size of the coefficient differs based on country characteristics and range between 0.103 in Lebanon and 0.429 in Egypt (i.e. 1 percent growth in GDP in Lebanon is expected to reduce

unemployment by 0.103 percentage points). The below graph illustrates the estimated job creation potential for the three scenarios, summed over all countries except Iraq. Iraq had to be excluded from this estimate due to the scarce data availability and economic instability over the past 15 years.

The graph shows the potential employment effects of the 3RP response plan as the difference between the ‘no policy’ scenario, which is driven by the baseline economic growth, and the ‘conservative’ and ‘upper’ estimates. Over 2017 and 2018, the inflow of humanitarian aid could create between 75,000 and 110,000 jobs. This describes the short-term job creation potential. Additionally, infrastructure and resilience building investments are important for fostering economic growth in the future. Based on general estimates for these long-term effects by the World Bank, the short-term projection could be scaled up by about 25 percent.

to target their programmes and policies in such a way as to promote inclusive growth.

In conclusion, the results indicate that humanitarian aid and resilience support under the umbrella of the 3RP can significantly support economic growth and job creation in the region. Although the 1.1 million job target seems unlikely to be achieved by the 3RP response alone, it represents a significant contribution to expanding economic opportunities for refugees and supports long-term growth by fostering resilience in host communities.



It is important to note that the study’s final estimate is a projection for the general job creation potential in each country. In relying on historic data and macro-level indicators, this estimation does not claim exact forecasting power, but should rather serve as an indicator for the potential size of effects. The results do not distinguish between refugees and host nationals, nor do they claim the kinds of jobs that are created. This micro-level impact will depend on 3RP programme implementation, targeting and national economic policies. Especially with regard to refugees, labor market barriers must be taken into account. Refugees experience much stronger economic, legal and social restrictions to employment than do citizens of host countries. As long as these barriers exist, refugees will not be able to benefit fully from the estimated expansion of economic opportunities. It is therefore up to the international community and host governments

INTRODUCTION

Creating economic opportunities for refugees and host communities has become a central component of the development approach in response to the Syria crisis. With the “Jobs Make the Difference” report, UNDP, in cooperation with ILO and WFP, provided the international community with important qualitative evidence on opportunities and challenges for job creation in the region. To further contribute to the debate, this paper outlines a high-level estimate for the regional short-term job creation potential of the 3RP Regional Refugee and Resilience Plan for 2017 and 2018.

In applying a macro-level estimation framework, the study explicitly does not attempt to follow a purely academic research approach, but rather provides an applied economic perspective on the impact of humanitarian aid on growth and job creation. This note has been prepared for the “Expert Meeting on Expanding Jobs and Economic Opportunities” in Bonn in November 2017.

The remainder of the paper is divided as follows: the first section outlines the background of the estimation and details the considered scenario. The second part gives an overview of the methodology. Section three describes the gathered data on the individual components of the methodology, namely Fiscal Multipliers and Okun’s law. Section four presents the results for each country and at the aggregate level. Lastly, part five summarises and frames the interpretation. Additionally, the data appendix lists the gathered data on Fiscal Multipliers and briefly summarises the relevant academic papers and their methodology.

1. BACKGROUND

At the “London Conference for Supporting Syria and the Region” in February 2016, the international community set the goal to create 1.1 million jobs for Syrian refugees and host communities in the countries affected by the Syria crisis until the end of 2018. This ambitious goal is complemented by commitments from the affected national governments neighbouring Syria (to open up their labour markets and improve their regulatory environment), the international community (to strengthen job creation through access to concessional financing and external markets) and the private sector (to foster economic growth by providing new investments).

The central development response of the international community is the Regional Refugee and Resilience Plan (3RP). The 3RP brings together the plans developed under the leadership of national authorities - namely, the Arab Republic of Egypt, the Republic of Iraq, the Hashemite Kingdom of Jordan, the Lebanese Republic, and the Republic of Turkey – to ensure protection, humanitarian assistance and strengthen resilience. As the core regional response initiative, it integrates and is aligned with national plans, including the Lebanon Crisis Response Plan (LCRP) and the Jordan Response Plan (JRP). It spans eight different sectors, including food security, education, and livelihoods. Bringing together a refugee protection and a resilience/stabilization component, it accounts for a total funding appeal of 4.63 billion dollars in 2017.

This paper estimates the fiscal stimulus effect of the 3RP regional response plan and potential employment effects in the light of the 1.1 million job target. Given the target date of 2018, this paper considers the short-run effect of the 3RP programme for 2017 and 2018. To quantify the fiscal effect, the estimates are based on the funding requirements, published in the Regional Strategic Overview 2017¹. Assuming that this appeal will not significantly change in the next year, the same budget will be considered for 2018. Although by 8 September 2017 only 38 percent of this funding has been received, estimating the effects of the full budget is important to reflect the potential contribution to the 1.1 million job target. This paper explicitly examines the employment effects of the whole 3RP budget and does not limit its evaluation to the “Livelihoods and Social Cohesion” sector as all humanitarian and resilience-related investments impact future economic growth and opportunities. The table below shows the exact funding requirements for 2017 (and by assumption for 2018).

¹ See *3RP Regional Refugee & Resilience Plan – Strategic Overview 2017-2018*

2. METHODOLOGY

In the absence of sufficient micro-level data, the following methodology relies on two macroeconomic indicators: Fiscal Multipliers and Okun's law. With reference to Romer, Bernstein (2009): The Job Creation Impact of the American Recovery and Reinvestment Plan, the approach uses Fiscal Multipliers to estimate the size of the fiscal stimulus on the national level².

distinction between short-term government spending and long-term government investment multipliers. In the following, the humanitarian 'Refugee' component of the 3RP will be defined as government consumption and the 'Resilience' component as government investment. However, it must be noted that Fiscal Multipliers are non-structural parameters and hence are neither time-

Country	Inter-Agency Appeal 2017		
	Refugee	Resilience	Total
Egypt	92,232,594	37,431,834	129,664,428
Iraq	162,338,438	65,806,394	228,144,832
Jordan	734,031,400	455,840,147	1,189,871,547
Lebanon	1,131,054,868	903,742,041	2,034,796,909
Turkey	456,144,663	434,027,371	890,172,034
Regional	155,605,723	5,000,260	160,605,983
Total	2,731,407,685	1,901,848,047	4,633,255,733

Source: 3RP Regional Refugee & Resilience Plan – Strategic Overview 2017-2018

Public investments generate a higher economic effect than their initial value, as the economy benefits from spillover effects. Building a refugee camp does not only create income for the construction company, but also for the providers of materials and labour. This income is then spent on other goods and services which in turn create additional economic effects. Fiscal multipliers capture these spillover effects of fiscal policy and are defined as the change of output (GDP) for a change of a fiscal policy instrument³. A multiplier of 1.5 represents that each dollar invested creates \$1.5 of GDP growth in the economy. They can be derived for a general change in fiscal policy, for interventions in specific sectors and for individual policy instruments such as government spending, investment, tax cuts or transfers. They are a useful tool for forecasting, as they provide an indicator for the previous effectiveness of fiscal policy in an economy.

Based on the framework laid out in Batini, Eyraud, Forni and Weber (2014), this paper will incorporate most recent national data on Fiscal Multipliers to project the GDP impact of the 3RP program for 2017 and 2018⁴. As common in the literature, this paper focuses on the

nor country-invariant. Their size differs based on country characteristics, economic circumstances, and policy parameters⁵. Therefore, the following estimation does not claim exact forecasting power, but should rather be considered as an indicator for the possible range of effects. To capture this, both a conservative and an upper estimate for the GDP impact will be provided.

As a second step, the so-called Okun's law or employment elasticity to GDP will be used to estimate the potential job creation based on the fiscal stimulus. This law describes the empirical relationship between changes in unemployment and output at the macroeconomic level⁶. First described by Okun (1962), the elasticity coefficient can be interpreted as the expected change in the unemployment rate for a 1 percent increase in GDP⁷. This so-called growth version of Okun's law will be used in this paper, both for reasons of econometric analysis and to facilitate interpretation. Using historic data to quantify this relationship, this elasticity will then be used to translate the national GDP impact into expected job creation. Although not determining an exact forecasting relationship, Okun's law is commonly regarded as a valuable approximation

² See Romer, Bernstein (2009): The Job Creation Impact of the American Recovery and Reinvestment Plan, *Mimeo, Council of Economic Advisers*

³ Here and in the following, see Chinn (2013): Fiscal Multipliers in New Palgrave Dictionary of Economics

⁴ See Batini, Eyraud, Forni, Weber (2014): Fiscal Multipliers: Size, Determinants, and Use in Macroeconomic Projections, *Fiscal Affairs Department, IMF*

⁵ For details see for example Ilzetzi, Mendoza, Végh (2013): How big (small?) are fiscal multipliers?, *Journal of Monetary Economics, Elsevier, vol. 60(2), pp. 239-254.*

⁶ See Cuaresma (2008): Okun's Law in The New Palgrave Dictionary of Economics

⁷ See Okun (1962): Potential GNP: Its Measurement and Significance, *Proceedings of the Business and Economics Statistics Section, p. 98-104*

for policy analysis. Several studies have shown that forecasts based on this elasticity outperform most baseline forecasts⁸.

Lastly, it is important to frame the interpretation of the results. As this paper relies heavily on historic data on macroeconomic variables, such as fiscal policy and GDP-unemployment relation, the final estimate is a projection for the general job creation potential in each country. It does not distinguish between refugees and host nationals or claims which kinds of jobs are created. This micro-level impact will depend on 3RP program implementation, targeting, and national economic policies. Refugees experience much stronger economic, legal and social restrictions to employment than do citizens of host countries. Many regional labor markets remain highly restricted for non-nationals, for example in form of limited access to work permits, gender barriers or job quotas. As long as these barriers exist, refugees will not be able to benefit fully from the estimated expansion of economic opportunities. Therefore, the estimated job creation potential can only be considered as an upper bound or a best-case scenario for refugees, provided these restrictions are addressed by policymakers and the international community.

In summary, the methodology is based on three assumptions:

1. Historical data on Fiscal Multipliers is valid for projecting GDP impact in the 3RP countries
2. Linking GDP impact and job creation with past data on Okun's law i.e. employment elasticity to GDP
3. Job creation potential is estimated for the whole economy and should only be considered as a best-case scenario for refugees due to existing labor market barriers

3. DATA

3.1 Fiscal Multiplier

The coefficients of Fiscal Multipliers in the five examined countries Egypt, Iraq, Jordan, Lebanon and Turkey are based on the recent academic literature. Data appendix A provides a comprehensive literature review and briefly describes relevant findings and methodologies. The results section references the relevant papers used for the GDP projections. To capture the uncertainty in the estimates, a conservative and an optimistic case is considered.

3.2 Okun's law

The Okun's law coefficient for each country is estimated based on data from the World Bank "World Development Indicators" and the ILO "Key Indicators of the Labour Market" database. Therefore, the definition of unemployment in this paper follows the ILO standards.

The coefficients have been estimated for each country based on data from 2001-2016. For comparison, Okun's law has also been examined for longer periods and in the form of rolling regressions. As the coefficients have been relatively stable over time, this paper uses the latest 15-year window for estimating the job creation potential to capture most recent developments. The below listed estimates are in line with recent academic literature. With the only exception of Iraq, all estimates are significant and have the correct sign. The coefficients describe the expected change in the unemployment rate for a 1 percent change in real GDP. As an example, Lebanese unemployment is expected to be reduced by 0.103 percentage points following on a 1 percent increase in GDP.

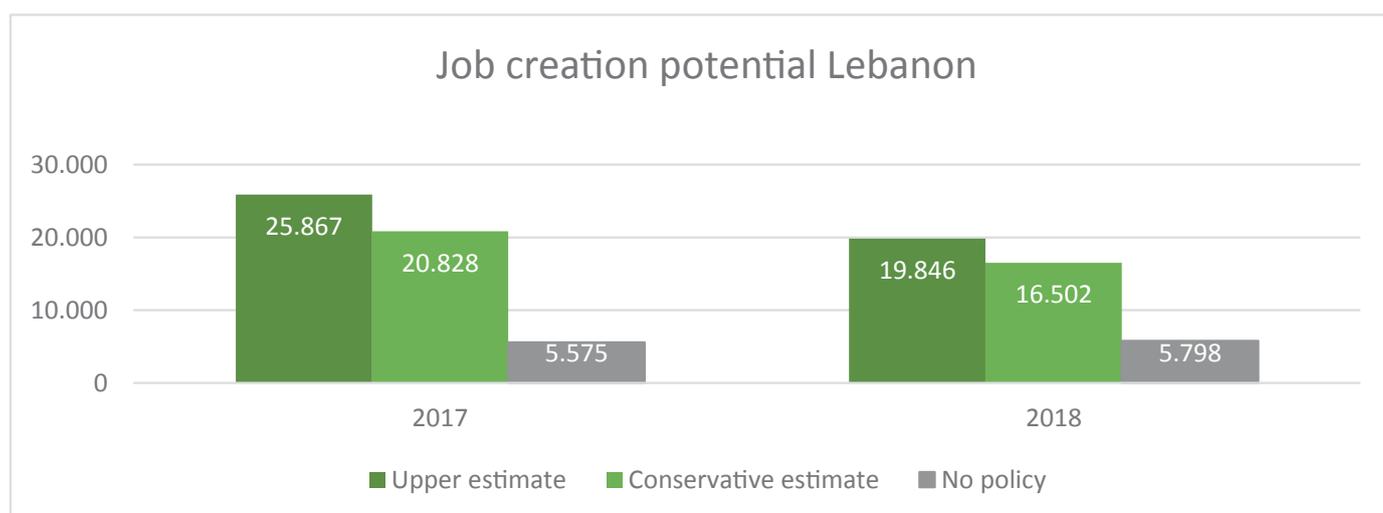
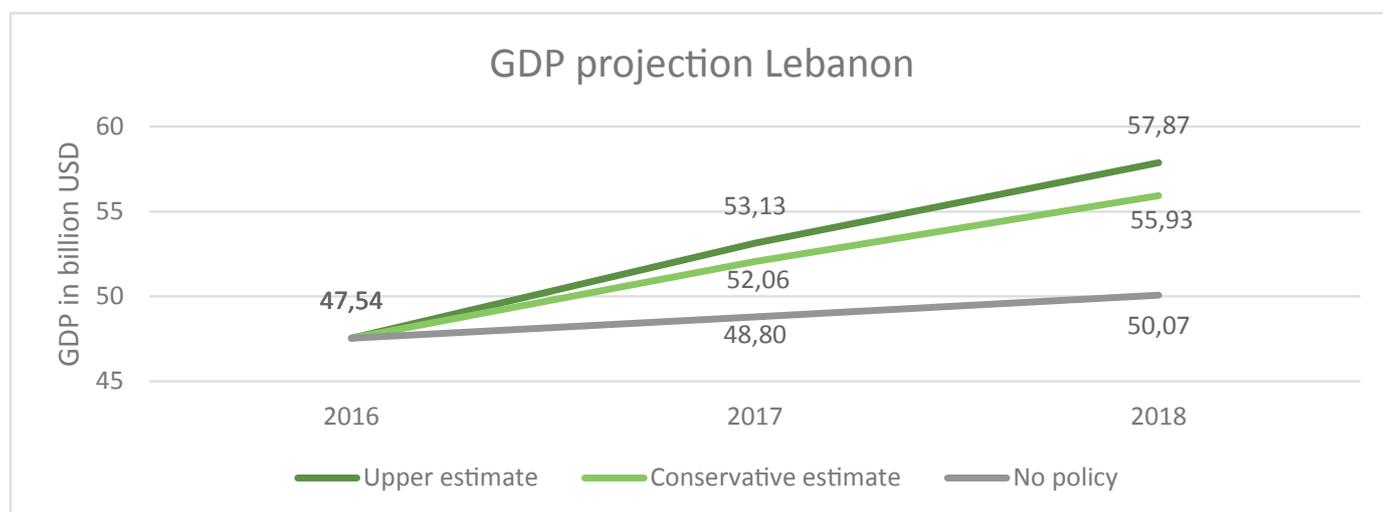
Country	Okun's law coefficient
Lebanon	-0.103
Jordan	-0.108
Turkey	-0.225
Egypt	-0.429
Iraq	Insignificant

Source: Author's calculations based on ILO and World Bank database

8 See for example Knotek (2007): *How Useful is Okun's Law*, Federal Reserve Bank of Kansas

4. RESULTS

4.1 Lebanon



Lebanon receives the largest amount of funding from the 3RP budget (\$2.034 billion per year) and hence benefits from the highest projected GDP and job creation impact. The estimates are shown in the graphs. The 'No policy' scenario describes here and in the following the basic GDP projection without the 3RP intervention. This projection is based on the 'World Bank Global Economic Prospects' forecasts. The Fiscal Multipliers for the conservative and the upper estimate have been taken from recent impact studies on humanitarian aid in Lebanon. UNHCR and UNDP (2015) estimate the fiscal impact of an 800-million-dollar aid package spent from 2011 to 2014 and find a coefficient of 1.6⁹. Hence, each

dollar spent in the aid programme created 1.6 dollar of GDP growth in the Lebanese economy. WFP (2014) undertake a similar exercise for their Value-Based Food Voucher Programme and estimate its impact on individual industries as 1.51¹⁰. Finally, the International Rescue Committee (2014) evaluates the impact of cash assistance in Lebanon and finds a multiplier of 2.13¹¹.

The job creation potential is calculated as the product of the labour force, Okun's law coefficient and real GDP growth. Although Okun's coefficient is relatively low in

⁹ See UNHCR, UNDP (2015): Impact of Humanitarian Aid on the Lebanese Economy

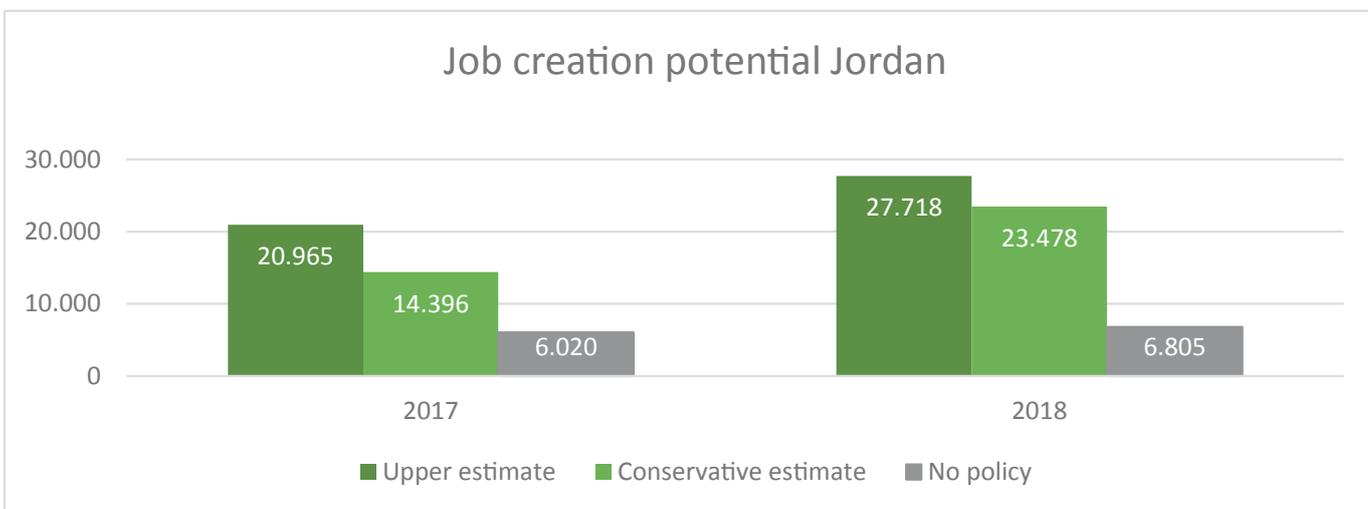
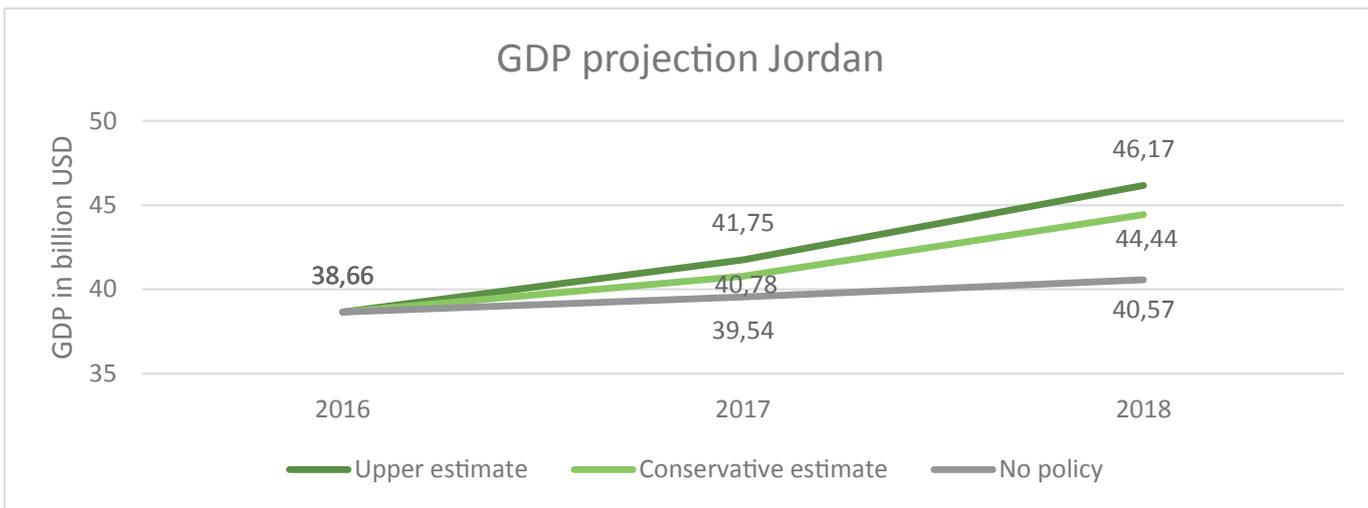
¹⁰ See WFP (2014): Economic Impact Study: Direct and Indirect Effects of the WFP Value-Based Food Voucher Programme in Lebanon

¹¹ See International Rescue Committee (2014): Emergency Economies: The Impact of Cash Assistance in Lebanon

Lebanon, the job creation impact of the 3RP program is large compared to the ‘No policy’ scenario. Given the relatively small size of the economy, the large inflow of foreign aid is projected to increase real GDP growth by 7 to 9 percentage points.

expenditure¹². They’re relevant estimates lie between 0.9 and 2.45 in the first period and between 0.96 and 5.83 in later periods. The IMF (2013) calculates short- and long-term multipliers and finds coefficients of 1.1/2.4 for capital expenditure and 1.0/2.1 for good and services¹³.

4.2 Jordan



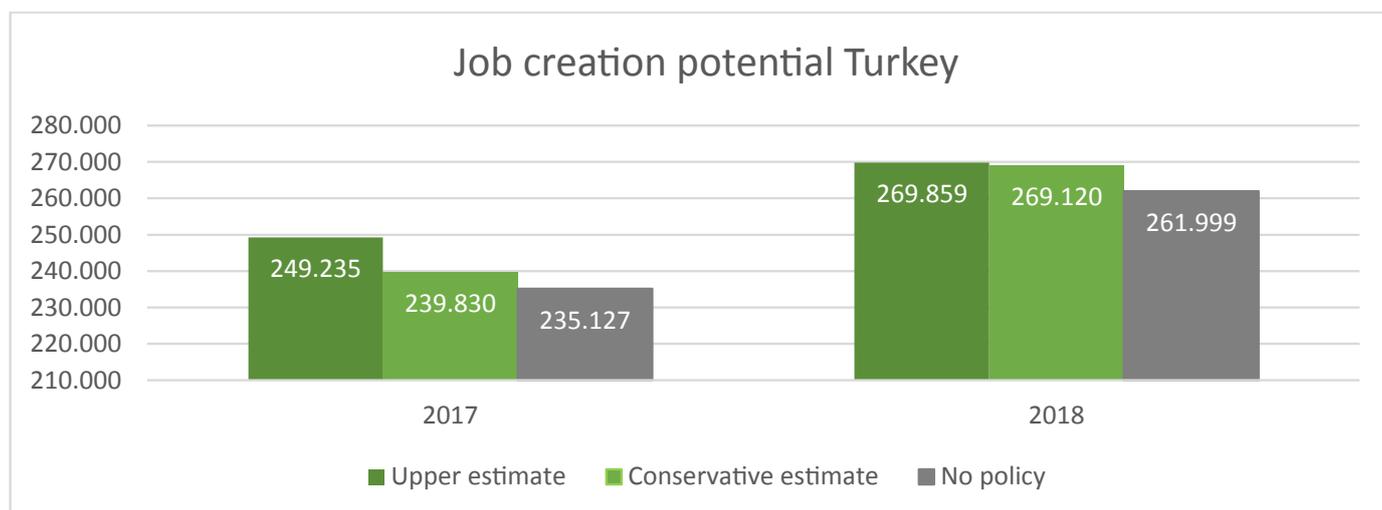
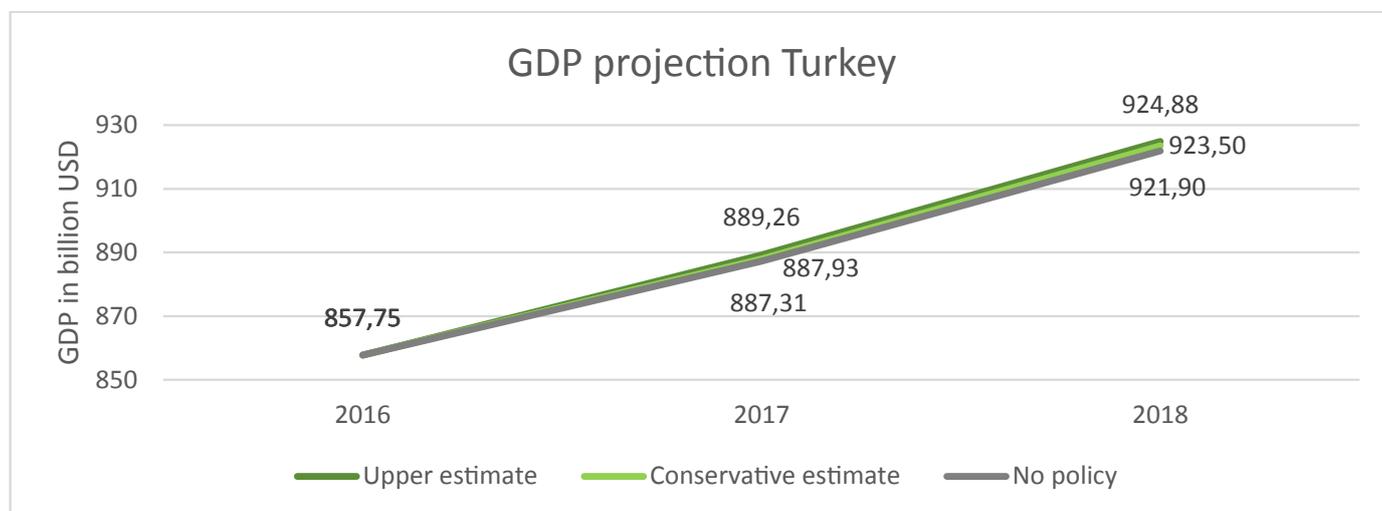
Jordan is the second-highest recipient of 3RP funds and is expected to experience a similarly strong momentum as Lebanon. Due to the size of these economies, the relative GDP impact is large which accelerates job creation. Furthermore, the additional fiscal stimulus might support the growth recovery after the economic slowdown in recent years.

The relevant Fiscal Multipliers are taken from two recent papers. Sarangi, Bhanumurthy and Abu-Ismael (2015) estimate multipliers for different types of government

¹² See Sarangi, Bhanumurthy, Abu-Ismael (2015): *Effectiveness of fiscal policy in Jordan: Impact on growth, poverty and inequality*, UN ESCWA, Working Paper, 2015 WP.8

¹³ See IMF (2013): *“Estimating Fiscal Spending Multipliers” in Jordan: First Review Under the Stand-by Arrangement*, IMF Country Report No. 13/130

4.3 Turkey



In comparison to Jordan and Lebanon, the impact of 3RP investments is much smaller in Turkey. Main driver for job creation in Turkey is the baseline economic growth, which is expected to accelerate following the recent economic challenges.

Fiscal Multipliers for this projection are based on studies by the OECD (2009) and Cebi and Özdemir (2016). The OECD surveys a range of simulation results of different macro models and provides adjusted averages for different government spending components¹⁴. The relevant first and second year estimates are 0.6/1.0 for government consumption and 0.8/1.2 for government investment. Cebi and Özdemir examine the non-linear effects of fiscal

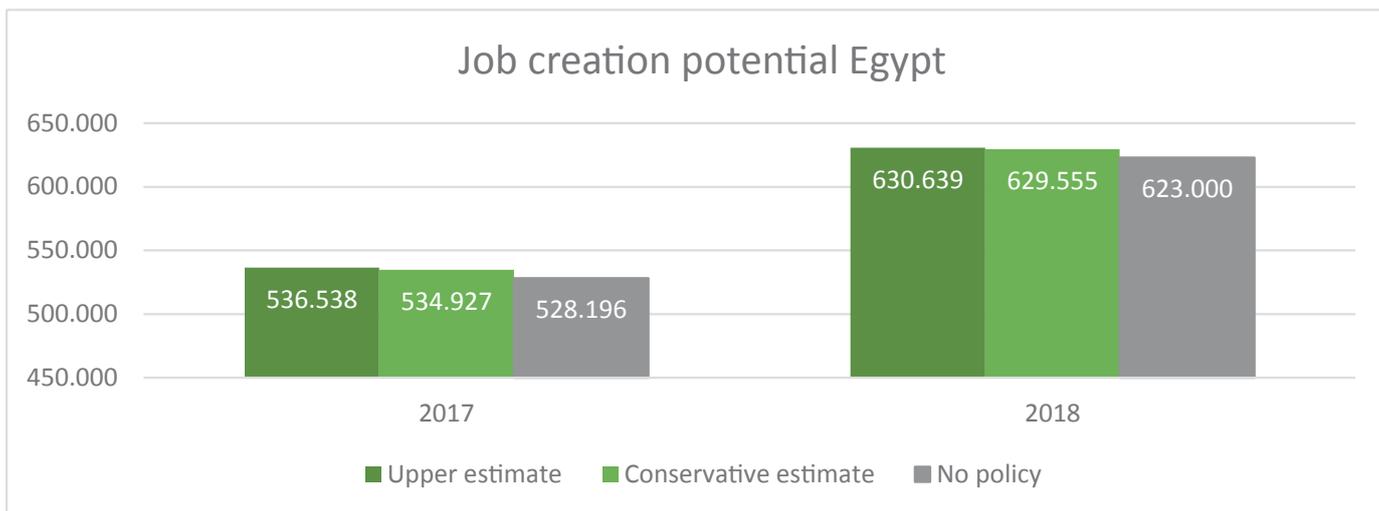
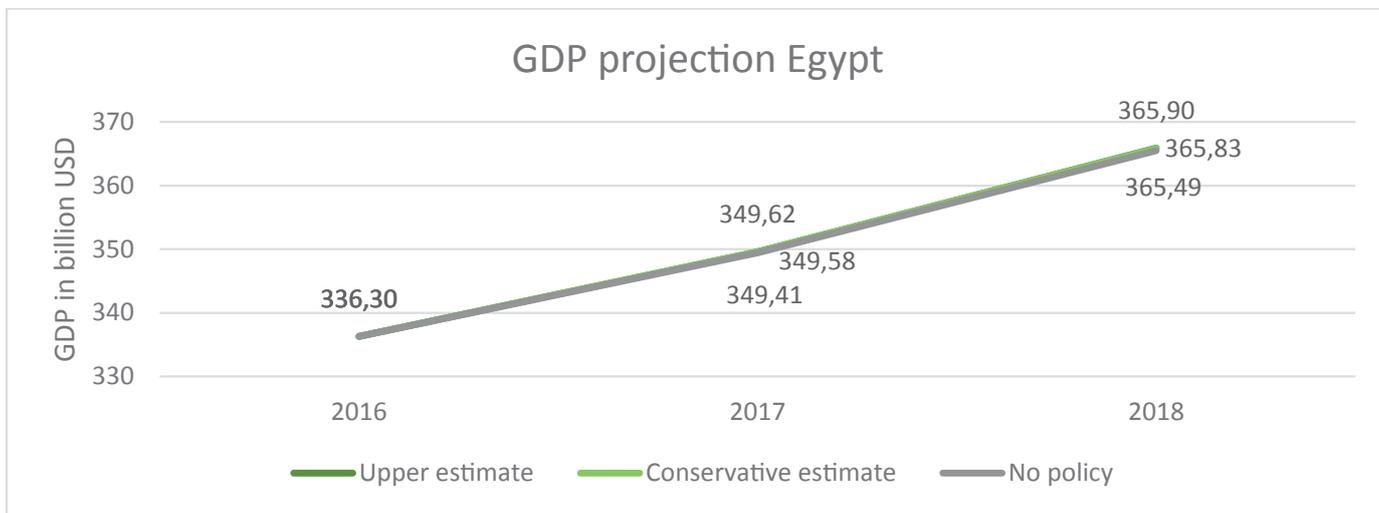
policy in Turkey for different phases of the economic cycle¹⁵.

Their relevant yearly multipliers, for times of low economic growth, are 2.02 for government consumption and 2.37 for government investment. Different to Lebanon and Jordan, Turkey does not have a fixed exchange rate regime. Therefore, the GDP projections are based on the 2016 average exchange rate to ensure comparability.

¹⁴ See OECD (2009): *The effectiveness and scope of fiscal stimulus in Economic Outlook*

¹⁵ See Cebi, Özdemir (2016): *Cyclical Variation of Fiscal Multiplier in Turkey, Working Paper 1619, Research and Monetary Policy Department, Central Bank of the Republic of Turkey*

4.4 Egypt



As the smallest recipient of 3RP funds and the second largest economy in the sample, GDP and job creation impacts are only marginal in Egypt. However, the high Okun’s law coefficient and the accelerating economic growth in recent years promote a significant decline in unemployment.

Basis for the Fiscal Multiplier in this projection are El-Baz (2014), Alnashar (2017) and Moursi and El Mossallamy (2010). El-Baz evaluates the effect of a large-scale stimulus programme in 2013 and calculates the short-run multiplier as 0.625 and the long run multiplier as 1.58¹⁶. Alnashar considers the difference in multipliers based on the economic cycle: he finds a

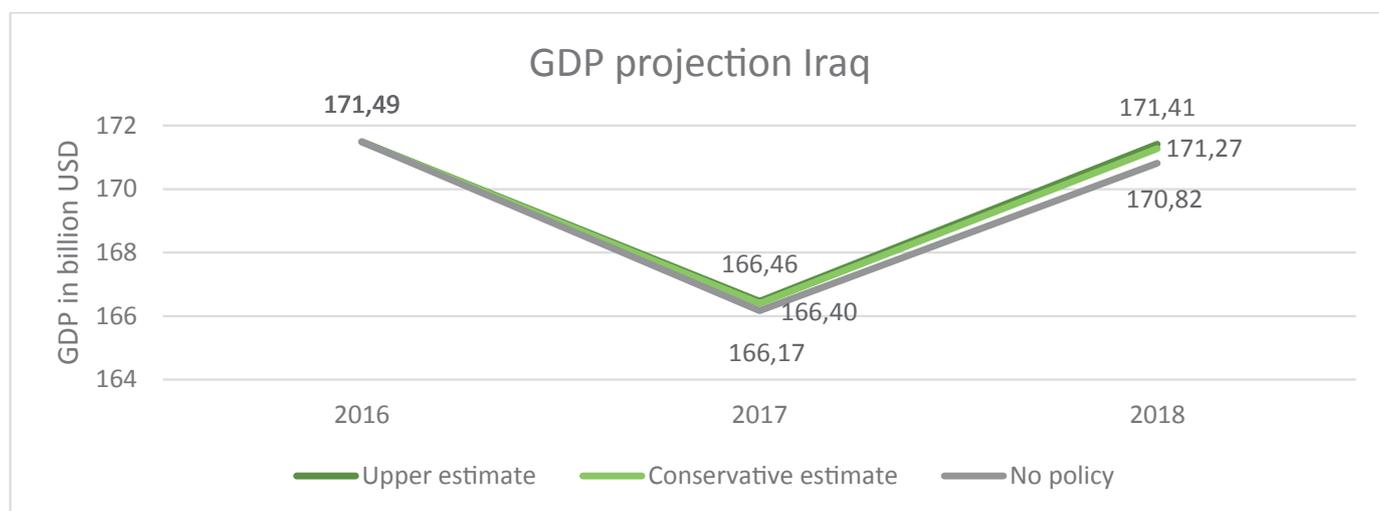
16 See El-Baz (2014): Is there a need for a Marshall plan in the Egyptian economy? An investigation of the fiscal stimulus package, Egyptian Centre for Economic Studies

value of 1.02 in boom periods and 1.35 in downturns¹⁷. Finally, Moursi and El Mossallamy estimate the short-run job creation impact of the fiscal stimulus package in 2008/2009 on a sectoral level¹⁸. With some outliers, the sectoral coefficients mainly lie between 1.5 and 2.4. Analogously to Turkey, the GDP projections are based on the 2016 average exchange rate.

17 See Alnashar (2017): Egypt’s Government Spending Multiplier: Its Size and Determinants, Research Paper for Economic Research Forum 23rd Annual Conference

18 See Moursi, El Mossallamy (2010): Measuring The Impact Of The Egyptian Fiscal Stimulus Package 2008/2009, ILO, Sub-regional Office for North Africa, Cairo

4.5 Iraq



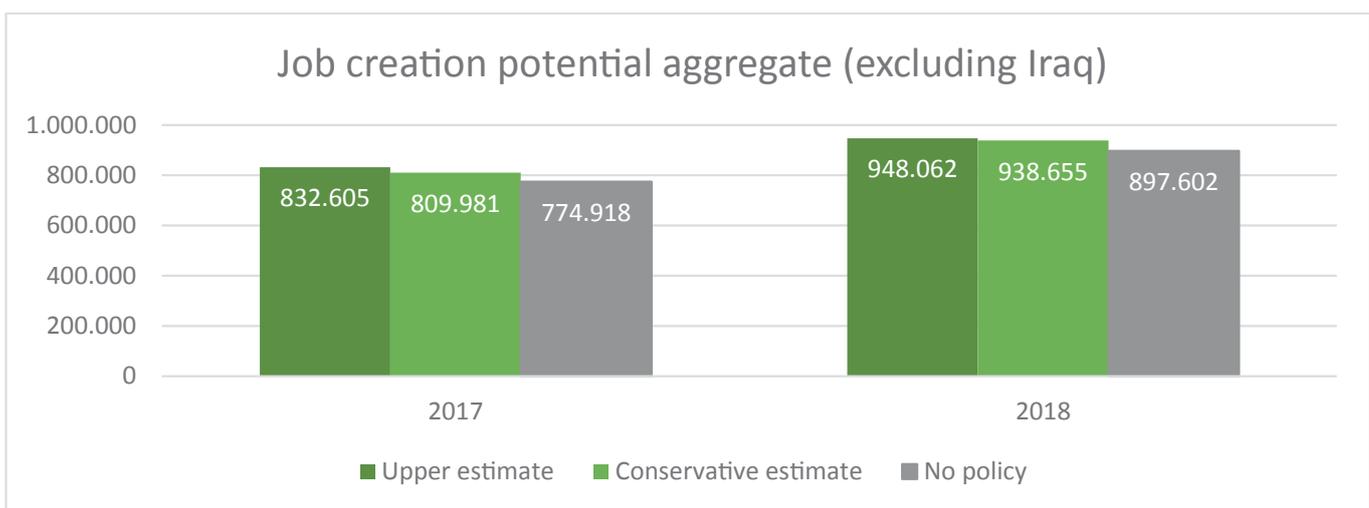
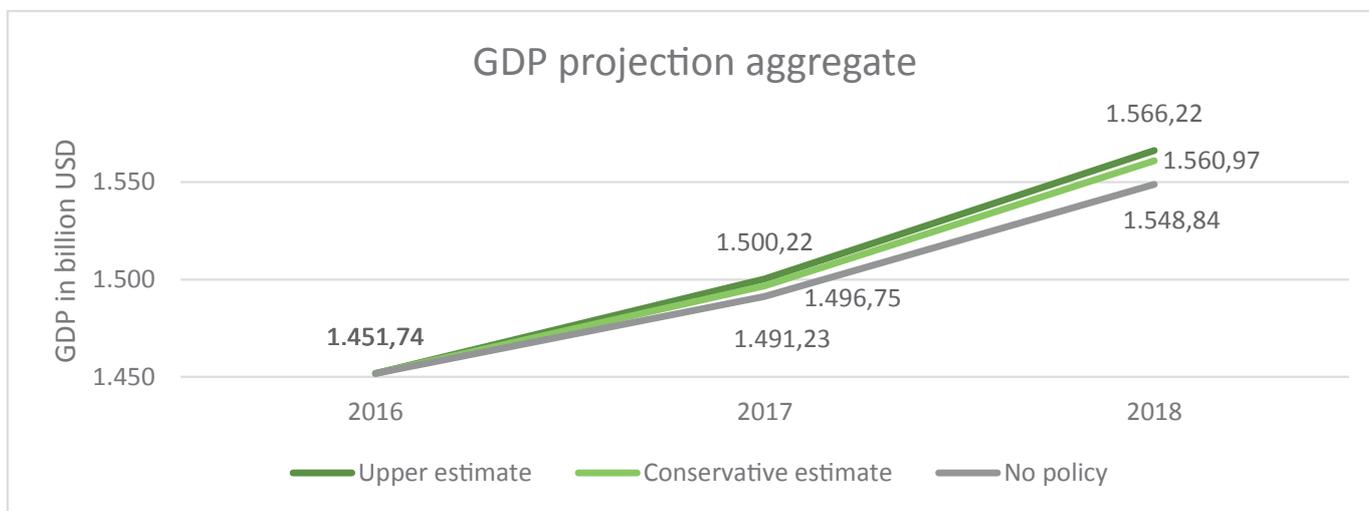
Iraq has been long suffering from economic instability. Military and political conflicts have significantly affected economic growth and livelihoods. Therefore, data on economic performance is limited both in terms of availability and quality. As economic stability is a vital requirement for economic estimation, it is not possible to apply the methodology of this paper to the available Iraqi data. This is reflected in the insignificant Okun's law coefficient that is in a highly non-regular relationship between GDP growth and unemployment in Iraq. However, broad data on GDP and relevant forecasts are available in the World Bank dataset. This allows projecting the GDP impact, but data limitations should be kept in mind.

No studies have been conducted to quantify the size of Fiscal Multipliers in Iraq. As an approximation for the GDP projection, two very broad estimates from the qualitative academic literature have been used. Gunter (2013) expects the relevant multiplier to be very low, between 1.0 and 1.3¹⁹. The IMF (2016) broadly estimates the average multiplier since 2013 as 0.59 per year²⁰.

¹⁹ See Gunter (2013): *The Political Economy of Iraq: Restoring Balance in a Post-Conflict Society*, Edward Elger Publishing

²⁰ See IMF (2016): *First Review of the Three-Year Stand-By Arrangement and Financing Assurances Review*, IMF Country Report No. 16/379

4.6 Aggregate



The aggregate overview shows the overall impact of the 3RP response plan on the impacted economies. With a total spending of about \$9 billion, the 3RP budget creates a much larger fiscal stimulus in 2017 and 2018. Only considering these short-term effects accounts for an estimated GDP impact of about \$17.5 to \$26 billion. The associated job creation impact adds up to an estimated 75,000 to 110,000 jobs, additional to the baseline job creation forecast. This estimate excludes Iraq for above-mentioned reasons.

5. CONCLUSION

This study has estimated the short-term job creation effects of the Regional Refugee and Resilience Plan. The analysis indicates that the 3RP can have a significant impact on economic growth in the region and contribute between 75,000 and 110,000 jobs to the London target. Overall, the 1.1 million job target seems unlikely to be achieved by external investment alone, but the accelerating economic growth in the region will significantly support this goal.

The relative effect for each country depends mostly on the size of its economy and the amount of funding received, with Lebanon and Jordan being the largest recipients. With a relatively small market, these countries are expected to experience a much stronger momentum in economic growth due to the large inflow of humanitarian assistance. However, even large economies such as Turkey and Egypt are expected to contribute between 12,000 and 23,000 jobs to the London target.

This paper only examined employment effects in the short term. Many sectors of the 3RP focus on building resilience and long-term capacities, which will have a lasting impact on economic growth through improved infrastructure, access to water, education and other development factors. The World Bank estimates these effects as so-called ‘Social Rates of Return’ at about 25 percent²¹. Considering this perspective, it can be argued to scale up the growth impact and job creation potential by an additional 25 percent.

Lastly, it is important to consider the limitations of the above estimates. Given the lack of quality micro-level data, the study’s methodology relies on approximating the growth and labour market impacts by historic data on Fiscal Multipliers and Okun’s law. Based on a range of strong assumptions, the results should not be regarded as exact forecasts but rather as an indication for the expected range of effects. Real effects will depend on a variety of factors, such as regional economic developments, national policies, 3RP funding and project implementation.

Furthermore, the results do not provide insights to what extent refugees will be able to benefit from the expansion of economic opportunities. Although humanitarian aid

and resilience support under the umbrella of the 3RP is more likely to target refugees, significant labour market barriers remain in many countries. Legal, social and economic restrictions have a detrimental impact for refugee labour market integration, increase competition in the low-wage sector and push people into the informal sector. It is therefore up to the international community and host governments to target their programmes and policies in such a way as to promote inclusive growth.

Overall, the paper demonstrates the 3RP’s significant contribution to economic growth and job creation in the region – a contribution that has mostly been overlooked in public discourse yet offers a powerful narrative for policymakers in fostering social cohesion among host communities.

21 See for example Briceño, Estache, Shafik (2004): *Infrastructure Services in Developing Countries: Access, Quality, Costs, and Policy Reform*, World Bank Policy Research Paper No. 3468

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- WFP (2014): *Economic Impact Study: Direct and Indirect Effects of the WFP Value-Based Food Voucher Programme in Lebanon*

A. Data appendix: Fiscal Multipliers

Turkey

OECD (2009): *The effectiveness and scope of fiscal stimulus in Economic Outlook*, <http://www.oecd.org/eco/outlook/42421337.pdf>

- Survey based on average of simulation results of different macro models in the OECD countries
- Results have been adjusted based on trade openness (measure for trade openness times historic slope coefficient of correlation between openness and size of multiplier) and 2009 crisis conjuncture
 - o Reference= adjusted for openness and conjuncture
 - o High= only openness

Fiscal policy variable		Year 1		Year 2	
		Reference	High	Reference	High
Spending increases	Government consumption	0.6	0.6	0.7	1.0
	Government investment	0.8	0.8	1.0	1.2
	Household transfers	0.4	0.4	0.7	0.8
Tax cuts	Personal income tax	0.2	0.4	0.4	0.8
	Indirect tax	0.2	0.2	0.2	0.4

Cebi (2015): *Government Spending Multiplier in Turkey*, Working Paper 1515, Research and Monetary Policy Department, Central Bank of the Republic of Turkey, <http://www.tcmb.gov.tr/wps/wcm/connect/TCMB+EN/TCMB+EN/Main+Menu/PUBLICATIONS/Research/Working+Papers/2015/15-15>

Structural VAR approach based on *Blanchard, Perotti 2002*²²

- Quarterly VAR includes government spending, tax revenues, output and real interest rate
- Excludes household transfers in analysis of government spending
- Data covers 2002 to 2014

	Impact	Peak (all second quarter)	One-year (cumulative)
Government spending total	1.0	1.5	0.9
Government consumption	1.4	1.9	1.7
Government investment	2.1	3.6	1.7

²² *Blanchard, Perotti (2002): An Empirical Characterization of the Dynamic Effects of Changes in Government Spending and Taxes on Output, Quarterly Journal of Economics, vol. 107, pp. 1329-1368*

Cebi, Özdemir (2016): *Cyclical Variation of Fiscal Multiplier in Turkey*, Working Paper 1619, Research and Monetary Policy Department, Central Bank of the Republic of Turkey, <http://www.tcmb.gov.tr/wps/wcm/connect/TCMB+EN/TCMB+EN/Main+Menu/PUBLICATIONS/Research/Working+Paperss/2016/16-19>

- Only non-linear model to estimate the size of FM in Turkey

Local projection model with regime switch: low and high growth based on *Jorda 2005*²³

- Quarterly regime switching VAR includes government spending, tax revenues and output
- Data covers 1990 to 2015

	Regime	Impact	Cum. one year	Cum. two years	Cum. peak	Normal peak
Government spending total	Low	1.73	2.28	1.59	2.3	2.13
	High	0.85	1.79	0.55	1.79	1.14
	Linear	1.33	2.04	0.90	2.05	1.79
Government consumption	Low	0.77	2.02	0.78	3.13	1.52
	High	0.27	-0.16	-5.27	0.70	0.65
	Linear	1.14	1.99	-2.66	2.06	1.92
Government investment	Low	2.09	2.37	1.55	2.59	2.24
	High	0.37	1.66	1.71	1.71	1.17
	Linear	1.42	2.26	1.43	2.32	1.81

Jordan

Sarangi, Bhanumurthy, Abu-Ismael (2015): *Effectiveness of fiscal policy in Jordan: Impact on growth, poverty and inequality*, UN ESCWA, Working Paper, 2015 WP.8, https://www.unescwa.org/sites/www.unescwa.org/files/publications/files/effectiveness_of_fiscal_policy_in_jordan.pdf

SVAR based on *Blanchard, Perotti 2002*

- Yearly VAR includes government expenditure (including different types), government revenues and output
- Data covers 1992 to 2012

Type of expenditures	Impact	Peak (peak year in brackets)
Aggregate public expenditure	1.15	1.15 (1)
Current expenditure	2.45	2.45 (1)
Capital expenditure	0.9	5.82 (3)
Government grants	-0.03	-0.03 (1)
Use of goods and services	0.33	0.96 (3)
Interest	0.07	0.07 (1)
Social benefits	0.21	1.25 (2)
Subsidies	2.85	2.85 (1)
Compensation of employees	0.9	0.9 (1)

IMF (2013): “Estimating Fiscal Spending Multipliers” in *Jordan: First Review Under the Stand-by Arrangement*, IMF Country Report No. 13/130, <https://www.imf.org/en/Publications/CR/Issues/2016/12/31/Jordan-First-Review-Under-the-Stand-By-Arrangement-Request-for-Waivers-of-Nonobservance-of-40561>

- Use Autoregressive Distributed Lag (ADL) model to estimate short- and long run elasticities
- Include log GDP, log real spending (including components), respective lags and a time trend
- Short-run elasticity= coefficient of real spending component
- Long-run elasticity= sum of the coefficients of the current and lagged spending components divided by one minus the sum of the coefficients of lagged output
- Multiplier for given component= elasticity divided by GDP share of current spending component
- Data covers 1985-2011

Type of expenditures	Short-run multiplier	Long-run multiplier	Short-run elasticity	Long-run elasticity	GDP share
Capital expenditure	1.1	2.4	0.07	0.16	7%
Goods and services	1.0	2.1	0.03	0.07	3%
Current expenditure	Insignificant	Insignificant	Insignificant	Insignificant	30%
Interest payments	Insignificant	Insignificant	Insignificant	Insignificant	5%
Military	Insignificant	Insignificant	Insignificant	Insignificant	9%
Transfers and subsidies	Insignificant	Insignificant	Insignificant	Insignificant	7%
Wages and salaries	Insignificant	Insignificant	Insignificant	Insignificant	6%

Egypt

El-Baz (2014): *Is there a need for a Marshall plan in the Egyptian economy? An investigation of the fiscal stimulus package*, Egyptian Centre for Economic Studies, https://mpr.ub.uni-muenchen.de/69717/1/MPRA_paper_69717.pdf

- VAR approach to calculate short, mid, and long-term elasticities
- Includes GDP growth rate, public investment-GDP ratio, private investment-GDP ratio, private consumption-GDP ratio and exports-GDP ratio
- Multiplier is calculated by multiplying elasticity with inverse public investment-GDP ratio
- Data covers 1982-2012

	Impact Multiplier	Peak Multiplier	Cumulative Multiplier
Public investment	0.625	1.68	1.58

Alnashar (2017): *Egypt's Government Spending Multiplier: Its Size and Determinants*, Research Paper for Economic Research Forum 23rd Annual Conference, http://erf.org.eg/wp-content/uploads/2017/03/Macr_ER-F23AC_SaraAlNashar.pdf

- Vector Error Correction Model (VECM) to estimate co-integration relationship
- Includes GDP, government expenditures, T-Bill rate, exchange rate and balance of goods and services to GDP ratio
- Estimates full sample and two sub-samples separately: 2005-2009 (economic boom) and 2009-2012 (economic downturn)
- Low value in boom period is explained with countercyclical fiscal policy, expansionary monetary policy and increasing exports
- High value in downturn is explained with accommodative monetary policy, decreasing exports and price level
- Data covers 2005-2016

Government expenditure	Cumulative multiplier		
	Full sample	Boom	Downturn
	1.32	1.02	1.35

Moursi, El Mossallamy (2010): *Measuring The Impact Of The Egyptian Fiscal Stimulus Package 2008/2009*, ILO, Sub-regional Office for North Africa, Cairo, <http://staging.ilo.org/public/libdoc/ilo/2010/461794.pdf>

- Estimate short-run job creation impact of fiscal stimulus in 2008/2009 on sectoral level
- Use input-output model for employment, vacancies and value-added inducement
- Calculate employment/vacancies/inducement multipliers on sectoral levels i.e. how much does aggregate employment change with respect to an increase in spending in certain sector
- Include household consumption, government expenditure, private investment, exports, primary inputs (labour and capital), indirect taxes, subsidies and import duties
- **Multiplier vary between sectors, for employment from 1.3 to 6.0**

Lebanon

UNHCR, UNDP (2015): *Impact of Humanitarian Aid on the Lebanese Economy*, <http://reliefweb.int/report/lebanon/impact-humanitarian-aid-lebanese-economy>

- Calculate fiscal multipliers to assess the total effect of humanitarian expenditure on aggregate demand and GDP
- Use an input-output approach/social accounting matrix
- Consider the effect of an aid package of 800 million dollars, spent from 2011-2014 by four UN agencies (UNDP, WFP, UNHCR, UNICEF)
- Components: 44% direct cash/food cards, 40% in-kind purchases, 14% salaries of UN and implementing personnel
- → multiplier of the whole aid package: 1.6
- Distribution among beneficiaries:

Type of beneficiary	Multiplier per group
Syrian refugees	0.8
Aid programme employees	0.2
Residents of Lebanon	0.6
Total	1.6

WFP (2014): *Economic Impact Study: Direct and Indirect Effects of the WFP Value-Based Food Voucher Programme in Lebanon*, <http://documents.wfp.org/stellent/groups/public/documents/ena/wfp267746.pdf?ga=2.172700451.1651868535.1503564962-1521298618.1503564962>

- Evaluate the effects of the e-card programme that provided food assistance of 345 million dollars for about one million Syrian refugees
- Estimate the multiplier effect based on input-output model on sectoral level, using the Leontief inverse
- Consider the spillover effects from additional investment in agricultural and food producing sector to others
- **Multiplier for food manufacturing is 1.51, for agriculture 0.67**

International Rescue Committee (2014): *Emergency Economies: The Impact of Cash Assistance in Lebanon*, <https://www.rescue.org/sites/default/files/document/631/emergencyeconomiesevaluationreport-lebanon2014.pdf>

- Evaluate multiplier effects of UNHCR cash transfer programmes in winter 2013/2014
- Use randomized control trial to examine the impact of receiving cash assistance
- Estimate the multiplier based on the marginal propensity to consume (MPC)
- As no studies on MPC in Lebanon available, they employ Jordanian data for a conservative estimate
- **Multiplier is calculated as: $1 / (1 - 0.53) = 2.13$**

Iraq

No published quantitative studies on fiscal multipliers in Iraq available, only indications in qualitative literature:

Gunter (2013): *The Political Economy of Iraq: Restoring Balance in a Post-Conflict Society*, Edward Elger Publishing, <https://books.google.jo/books?id=3SMvIbNCYI8C&pg=PA254&lpg=PA254&dq=iraq+fiscal+multiplier&source=bl&ots=MF2An075bz&sig=UW1X1rbB9VsQduRZ7Jc68u0jMxM&hl=de&sa=X&ved=0ahUKEwiW6MLFme7VAhVE7xQKHRRsAhYQ6AEILjAB#v=onepage&q=iraq%20fiscal%20multiplier&f=false>

- Expects the fiscal multiplier to be very small, between 1.0 and 1.3
- Based on high proportion of imports and high saving rate in Iraq

IMF (2016): *First Review of the Three-Year Stand-By Arrangement and Financing Assurances Review*, IMF Country Report No. 16/379, <https://www.imf.org/en/Publications/CR/Issues/2016/12/31/Iraq-First-Review-of-the-Three-Year-Stand-By-Arrangement-and-Financing-Assurances-Review-44455>

- Estimate average fiscal multiplier as ratio of real non-oil GDP growth to real non-oil expenditure
- Since 2013, the average multiplier has been 0.59

