Appendix 2

The economic impact of the Government's household mortgage relief measures

In accordance with the current Government's policy statement and a Parliamentary resolution from June 2013, the Prime Minister appointed an expert group whose task was to draft various methods of reducing indexed mortgage principal and to submit its recommendations of the most effective ways to achieve such reduction.

The group submitted its report on 29 November 2013 (see Prime Minister's Office, 2013). The proposal is in two main parts: first, direct reduction of households' indexed mortgages, to be funded through the Treasury; and second, tax-free withdrawals of third-pillar pension savings used to pay down mortgage debt. According to the expert group's estimates, it is assumed that, through these measures, borrowers can reduce their outstanding mortgage debt significantly over the next four years.

This Appendix presents the Central Bank of Iceland's assessment of the effects of these measures on economic activity and inflation during the period 2014-2018. No particular assessment is made of the effect on the Treasury's position, as it is assumed that the measures will be fully funded. Nor is there any particular assessment of the potential effect on the financial system, the resolution of Iceland's balance of payments problem, or the liberalisation of the capital controls. The present analysis is limited to the effects on overall demand and inflation and the potential monetary policy responses to these.[1]

Direct reduction of indexed mortgage principal

The expert group recommends that indexed mortgages be reduced by an amount corresponding to the indexation in excess of 4.8% (the average inflation rate for the period 2001-2007) that was applied during the period from December 2007 through August 2010. Indexation above this reference figure will be reimbursed, reducing the principal. It is estimated that the reimbursements will correspond to a reduction in principal of roughly 13%, whereas the consumer price index used for indexation rose by 14.9% in excess of the 4.8% reference limit per year during the period in question.

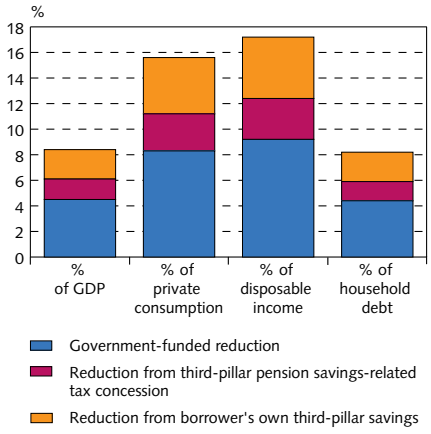
The group's proposals allow for a maximum of 4 m.kr. per household, with an estimated 90% of households able to benefit from the full amount of the reduction. Previous reduction of principal will be deducted, including write-downs from relief measures such as the 110% option, special mortgage interest subsidies, debt mitigation, or problem debt restructuring measures.

It is recommended that the write-down be implemented by dividing eligible mortgages into two parts: the "main portion" of the original loan and the "correction portion", which is estimated to av-

1. The potential effects of the measures on the financial system and the Housing Financing Fund will be discussed in the Bank's *Financial Stability* 2014/1 report, scheduled for publication on 9 April 2014.

erage up to 13% of the original loan principal. The borrower stops paying on the correction portion, although it is still assumed that he/she is liable for it, but instead the Treasury pays up the correction portion in equal instalments over a four-year period. According to the expert group's assessment, the indexed debt that households must pay will decline immediately by an estimated 72 b.kr., and the cost to the Treasury for this part of the debt relief package will total some 80 b.kr., which will be distributed over the four years. The 8 b.kr. difference is due to accrued interest and indexation, prepayment provisions on the bonds, and the difference between market value and nominal value of the loans, which households would otherwise have had to pay. As is described below, the intention is to finance this portion with a tax on financial institutions and the estates of failed financial institutions, and provisions on the first phase are already included in this year's National Budget.

Chart 1
Scope of debt relief measures
Percentage of estimated economic variables 2013



Sources: Prime Minister's Office (2013), Central Bank of Iceland.

Reduction of indexed mortgage debt with third-pillar pension savings and tax incentives

The second part of the debt relief package involves authorising households with mortgage debt to use payments that would otherwise be allocated to third-pillar pension savings to reduce their loan principal. The expert group's report also mentions that those who do not own a home could allocate their third-pillar pension savings tax-free to a special mortgage savings account. In so doing, the Treasury is relinquishing income tax on up to the 4% employee contribution and the 2% employer contribution, provided that these amounts are used to reduce mortgage principal. It is recommended that the tax-free ceiling be set at 500,000 kr. per family per year and that the measure remain in effect for three years. The expert group recommends that the measure be restricted to those who had mortgages before 1 December 2013, but this could prove difficult to enforce, as it is also recommended that the measure be offered to renters as well. The scope of the measure is estimated by the expert group at 70 b.kr.[2] The Treasury's share, through the tax concessions, is therefore roughly 28 b.kr. (40% of 70 b.kr.), and the remainder, 42 b.kr., is the pension savers' own contribution towards the reduction of their debt.[3]

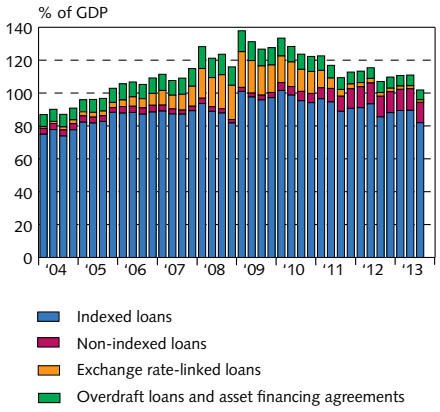
Total scope of the debt relief package

The expert group estimates the total scope of the package at 150 b.kr., to be distributed over a four-year period. Of that total, the Government will contribute a total of 108 b.kr. (80 b.kr. for the reduction of mort-

2. The expert group's report contains a discrepancy relating to these variables. On p. 7 (Prime Minister's Office, 2013), the scope of this part of the package is estimated at 70 b.kr., the figure that is usually used in general discussion of the debt reduction measures. On pp. 45-46, however, it is stated that the third-pillar pension savings measure will reduce the debt of those who already have third-pillar pension savings by some 67 b.kr. and the debt of new participants by 15 b.kr., giving a total of 82 b.kr. The Bank's analysis is based on the former figure, as it appears to be the reference figure used by the authorities in their assessments.
3. Here it is assumed that if these savings had been paid out as other third-pillar pension savings has been, it would have been taxed as regular income falling in the middle tax bracket as it is in 2014. This assumption is somewhat uncertain, however, as a portion of this income could fall into the lowest tax bracket and a portion could fall into the highest bracket. Changing the assumptions about the peripheral tax brackets for third-pillar pension savings payouts does not radically change the main results, however.

gage principal and 28 b.kr. for the above-mentioned tax concessions), and the other 42 b.kr. will come from households' third-pillar pension savings. As Chart 1 shows, the scope of the package corresponds to approximately 8½% of estimated year-2013 GDP, or 15½% of private consumption and about 17½% of households' estimated disposable income. Of that total, the Government contribution is equivalent to approximately 6% of GDP, just over 11% of private consumption, and 12½% of estimated disposable income.[4] Household debt is estimated to decline by about 8% as a result. Other things being equal, it could therefore fall from nearly 102% of GDP in Q3/2013 to just under 94% by the time the full effect of the measures has surfaced. Because the direct reduction of principal is focused only on indexed debt, the share of indexed loans in household debt will decline still further from the present level (Chart 2).[5]

Chart 2
Household debt[1]
Q1/2004 - Q3/2013



1. GDP seasonally adjusted by Central Bank.
Sources: Statistics Iceland, Central Bank of Iceland.

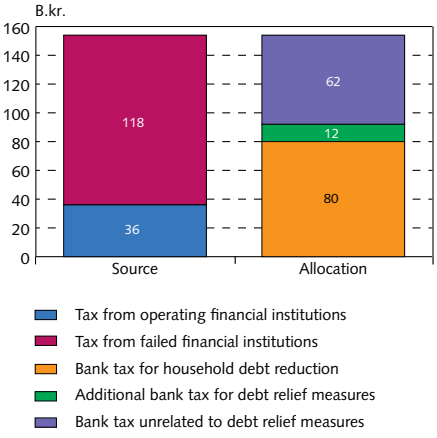
Funding of the debt relief measures

The plan is to fund the debt relief package with a special bank tax on financial institutions and the estates of the failed financial institutions. The portion of the bank tax ear-marked for this debt reduction programme totals 23 b.kr. per year, or 92 b.kr. over the four-year period (Chart 3). Of that amount, 20 b.kr. per year, or a total of 80 b.kr., will be allocated to debt reduction. As is stated above, 72 b.kr. will be used to reduce indexed loan principal, and 8 b.kr. will be used for accrued interest and indexation, prepayment provisions, and the difference between the nominal and market value of the loans. The remainder, some 3 b.kr. per year (a total of 12 b.kr. over the four-year period), will be used to ensure full funding of the measures. This includes 1.8 b.kr. to offset the estimated reduction in Treasury revenues due to the increase in the third-pillar pension savings contribution from 2% to 4% this year, and 2 b.kr. for general expenses related to implementation of the measures. The remainder, 8.2 b.kr., is intended to meet expenses incurred by the Housing Financing Fund (HFF) as a result of accelerated prepayment and to cover other unforeseen expenses in connection with the measures.

The revenues from the bank tax itself are estimated to be somewhat higher, however, or 38.5 b.kr. per year (154 b.kr. over the four-year period). The 62 b.kr. in excess of the 92 b.kr. directly related to the debt reduction measures are a part of Treasury revenue generation and are not connected to the measures discussed here.

It is assumed that 36 b.kr. of the 154 b.kr. bank tax will come from currently operating financial institutions, whereas the bulk of the funding, or 118 b.kr., will come from the estates of the failed financial institutions (Chart 3). Therefore, it can be assumed that approximately 70 b.kr. of the 92 b.kr. intended to finance the debt reduction measures will come from the failed financial institutions.

Chart 3
Estimated bank tax



Sources: Prime Minister's Office (2013), Ministry of Finance and Economic Affairs, Central Bank of Iceland.

4. Based on Statistics Iceland figures for the first three quarters of 2013 and on the Central Bank forecast in *Monetary Bulletin* 2014/1 for the fourth quarter.
5. The scope of these measures can be compared with the scope of the debt reduction following the court judgments on the illegality of exchange rate-linked loans and other measures to reduce debt in 2010-2013. These are discussed in Box IV-1 in *Monetary Bulletin* 2013/2.

Economic impact of the measures: overview of specific effects

Households' net wealth will increase as a result of the debt relief measures. Debt service will decline, and household income will rise. The measures also increase the effective money supply and raise employers' wage costs by the amount of the rise in their pension contributions as a result of wage-earners' increased use of third-pillar pension savings. The discussion below explores each of these factors and then analyses the overall impact of the measures on economic activity and inflation. It includes an assessment of the most likely impact of the measures on key economic variables and gives two alternative scenarios reflecting the possible upper and lower limits of the effects. As has been stated previously, it is assumed that the debt relief package will be fully funded with the above-specified bank tax, in accordance with the authorities' plans. As a result, it is not assumed that the cost of the measures must be defrayed later through subsequent taxation on households (which would prompt households to put extra money aside to cover their future tax burden, according to a Ricardian equivalence channel). Nor is it assumed that the measures will reduce operating financial institutions' profits enough to prompt them widen their interest rate spreads to cover the costs they will incur in the wake of the measures. If the interest rate spread widens significantly, however, it could somewhat mitigate the demand-side effects of the measures. Clearly, though, all of these assumptions are subject to some uncertainty.

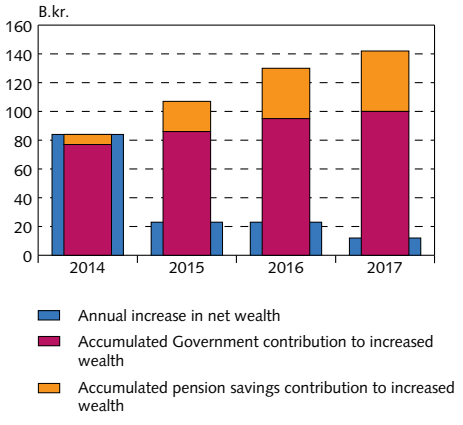
Wealth effect

Net household wealth (assets in excess of liabilities) will increase as a result of the Government's transfers to households. Other things being equal, this should increase their willingness and ability to spend. Increased net household wealth will enable households to take on additional debt to finance increased private consumption, as their collateral capacity will have increased.[6] They could also choose to spend other savings, owing to increased net housing wealth.

According to the Central Bank's quarterly macroeconomic model (QMM), the direct wealth effect on private consumption will be relatively modest: for each 100 kr. in increased wealth, long-term private consumption will increase by approximately 5½ kr.[7] This figure is well in line with the international literature, which typically reports a wealth effect in the range of 3-10 kr. per 100 kr. in increased wealth (see, for instance, Davis and Palumbo, 2001; Carroll, Otsuka, and Slacalek, 2011; and Gilchrist and Zakrajsek, 2013).

As is stated above, it is assumed that the debt households must service will decline immediately by 72 b.kr. In addition, it should decline by another 70 b.kr. through the use of third-pillar pension savings. This part of the debt reduction measures entails the transfer to households of 28 b.kr. in tax concessions on third-pillar pension savings payouts. The

Chart 4
Household debt reduction



Sources: Prime Minister's Office, (2013), Central Bank of Iceland.

6. On p. 51 of the expert group's report (Prime Minister's Office, 2013), mention is made of possible measures to restrict households' mortgage refinancing options, but this idea is not explored further. Experience shows, however, that it is difficult to prevent increased wealth from leading to increased private consumption if households wish to step up consumption.

7. See Daníelsson *et al.* (2009). Using the updated estimation of the private consumption equation, part of Version 3.0 of the QMM (forthcoming).

remaining 42 b.kr. will be funded by households themselves, with their pension savings. On a consolidated basis – that is, including households' holdings in the pension funds in their balance sheets – net wealth should increase by a total of 100 b.kr. Households' pension assets are not included in Statistics Iceland's household accounts (which are used in the QMM), however; therefore, the increase in assets measures larger, or 142 b.kr. (that is, the immediate transfer of 72 b.kr. and the additional 70 b.kr. that is distributed over this year and the next three years; see Chart 4). It is appropriate to remember that although household wealth including pension assets will increase by 100 b.kr., their net assets eligible as loan collateral will increase by a total of 142 b.kr., as pension assets are ineligible as loan collateral. However, it is not a given that households will consider their collateral capacity to have increase this much, and it can be argued that 142 b.kr. is the upper limit of this wealth effect and the 100 b.kr. direct transfer represents the lower limit. For the purposes of the present analysis, it is therefore assumed that the direct wealth effect lies between these two figures, at about 121 b.kr. (the 72 b.kr. immediate transfer and the 49 b.kr. distributed over this year and the next three years). According to the QMM, this could increase private consumption permanently by nearly 7 b.kr., or 0.7% of estimated year-2013 private consumption. The short-term effects could be somewhat greater, according to the model, although this is offset by the distribution of the measures over four years' time. Private consumption could increase by 8 b.kr. based on the upper limit, and by 5½ b.kr. based on the lower limit. The macroeconomic impact of the measures is assessed in terms of the average of the upper and lower limits, although it can be argued that the final effect will be closer to the upper limit. According to the findings from Sousa (2009), the wealth effect from debt reduction is usually greater than the increase in assets.

Impact on debt service

According to the expert group's estimates, in mid-2014 households will stop servicing 13% of their indexed loan principal as it stood in December 2007. Their debt service on indexed mortgage loans will therefore decline immediately. In line with the assumptions on which the authorities' analysis is based, the assessment of the impact on debt service assumes that the average interest rate on indexed household debt is 4.5%, that 80% of the loans in question are 40-year loans and the other 20% are 25-year loans, and that, on average, the loans were taken in 2004 (see Analytica, 2013). As a result of the debt reduction part of the measures, household debt service will be reduced by 2½ b.kr. this year and by 5-5½ b.kr. per year thereafter.

Households' debt service burden will also be eased by the debt reduction from the third-pillar pension savings part of the measures. It is assumed here that the composition of indexed mortgage debt will be the same as before. In addition, it is assumed that 11% of the loans towards which payments are made with third-pillar pension savings are non-indexed loans bearing an average of 6.5% interest and with an average maturity of 25 years (see Analytica, 2013). It is assumed that the non-indexed loans were taken at mid-year 2010, on average. The debt service burden will therefore be reduced in stages as a result

of re-allocation of pension savings contributions: it will decline by 0.2 b.kr. in 2014 and by a total of 5.3 b.kr. by 2018. The total reduction in debt service as a result of the measures therefore increases from 2.7 b.kr. this year to 10.8 b.kr. by 2018.

Impact on households' disposable income

A reduced debt service burden will increase households' disposable income by the amount corresponding to the interest portion of the debt service. As a result of this, households' disposable income is estimated to increase by 2 b.kr. this year and gradually rise to a total increase of 8 b.kr. by 2018.

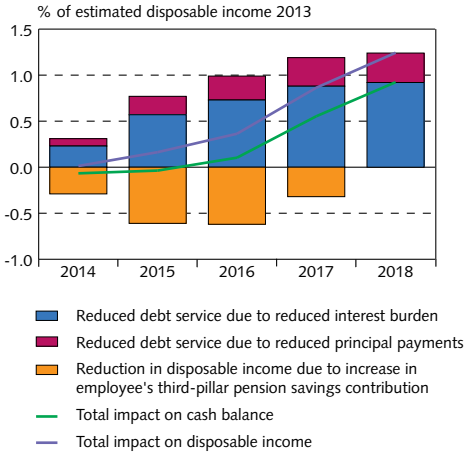
Changes in the treatment of households' third-pillar pension savings also affect their disposable income, as the pension funds' assets and the returns on their assets are excluded from Statistics Iceland's disposable income accounts. If a wage-earner decides to increase his or her contributions to third-pillar pension savings and enjoy the tax deduction by paying into loan principal, the payment is deductible at the time it is paid in, and because it is not freely disposable, it is not added when it is paid out. Wage-earners' increased contribution to their third-pillar savings will therefore reduce measured disposable income by the amount of the additional contribution.

The impact of the third-pillar pension savings provision on disposable income is estimated based on the authorities' assumption that the total scope of the measures is 70 b.kr. If the average percentage contributed to third-pillar pension savings by those who currently have mortgages rises by 1½ percentage points in mid-2014 and this increased participation generates 13 b.kr. in savings (with the employer's contribution), households' contribution to this increase will total 8 b.kr. per year. Of that total, just over 3 b.kr. is due to tax concessions. Chart 5 shows the estimated total effect of the measures on disposable income as measured in terms of the expenditure accounts used by Statistics Iceland. The effects are slight or non-existent early on, as the increased pension contribution offsets reduced debt service. From 2017 onwards, however, the impact increases, owing to the growing effect of reduced debt service combined with the declining effect of the rise in pension contributions. The effects of increased third-pillar pension savings contributions will have disappeared by 2018, when disposable income has risen by 1% of estimated year-2013 income. The chart also shows the effect of the measures on households' "cash balances", which also reflects the effect of declining payment towards loan principal on their financial position. The impact on cash balances is therefore greater than the impact on measured disposable income.

In estimating the direct effects of changes in disposable income on households' consumption plans, it is important to keep in mind that the effects on disposable income tend to provide an incentive towards certain types of saving that are measured as a deduction from disposable income. It is not clear that this incentive will lead to an increase in net household saving, as it could prompt a reduction in other types of saving. The direct effect on disposable income could therefore entail an underestimation of the effect of the measures on household spending plans, especially early on.

Chart 5

Impact of debt reduction measures on households' disposable income and cash balances



Sources: Analytica (2013), Prime Minister's Office (2013), Central Bank of Iceland.

The ultimate effect will also be determined by the financial position of the households benefitting from the debt reduction. There is insufficient information available about the effects of the measures on different households with specific levels of income and assets. It does appear, however, that a share of the transfer will be received by households that are reasonably strong financially, have ready access to credit, and can offer sound collateral. These households are therefore less constrained by changes in their current income and cash position than are more heavily leveraged households (see, for example, the findings of Ólafsson and Vignisdóttir, 2012). In addition, the ceiling on the pension savings measure implies that households must avail themselves of their pension savings to varying degrees in order to benefit fully from the tax shelter afforded by the measure. Moreover, there are signs that households have been refraining from taking on expense, particularly in connection with larger purchases, until the uncertainty about the Government's debt relief measures was eliminated. Now that the measures have been announced and the uncertainty about household balance sheets has diminished, it can be expected that some of these households will move ahead with spending plans that had been put on hold. This would emerge in a pent-up effect on private consumption, but also in a reduction of other saving to offset increased third-pillar pension savings. In assessing the direct income effect of the measures on private consumption, it is therefore assumed that households will smooth their consumption plans over time, consuming in excess of the income effects early on but less than the increase in income in the latter part of the period.

The scope of this direct income effect is highly uncertain and will ultimately be determined in part by the magnitude of the increase in third-pillar pension savings. As has previously been stated, there is a discrepancy in the Government report (Prime Minister's Office, 2013) as regards how much debt could decline as a result of this part of the measures. The estimated income effect due to increased third-pillar pension savings participation is based on the assumption that debt will decline by a total of 70 b.kr., but on pp. 45-46 of the Government report it is stated that changed saving patterns could reduce debt by 82 b.kr. The estimate of the upper limit of the income effect is therefore based on this figure. The effects could also be less pronounced; for instance, because of the 500,000 kr. ceiling, fewer households might avail themselves of this option than is assumed in the Government's calculations. It is difficult to estimate the scope of this effect without an in-depth examination of the income distribution of participants in the measure. However, for this report, the estimate of the lower threshold assumes simply that it is symmetric with the upper threshold, which puts the scope at 58 b.kr.

Interaction between the bank tax and the effective money supply

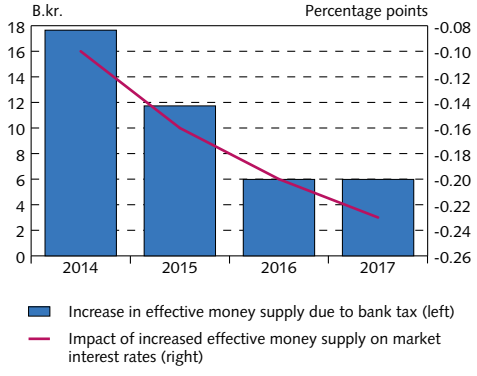
As is mentioned above, the intention is to finance the debt reduction through a tax on operating financial institutions and the estates of the failed financial institutions. Of the 92 b.kr. to be taken from the bank tax to fund the debt relief package, an estimated 70 b.kr. (about 17.6 b.kr. per year) will come from the estates of the failed banks. Presum-

ably, the estates will use their króna-denominated balances in domestic credit institutions to satisfy this tax obligation, insofar as is possible. It should be borne in mind that a portion of these balances are now in term deposit accounts tied up by Central Bank liquidity rules and cannot be used by domestic credit institutions for lending, as other balances can be. Using these balances to pay the tax will increase the "effective" money supply, as the Government will use it to pay down mortgages in operating financial institutions. But the public will not want to hold this increased money supply unless the opportunity cost of money holdings diminishes; that is, unless market interest rates fall. The economic effect of this activation of new money supply can therefore be assessed by attempting to estimate how large an interest rate reduction corresponds to this increased money supply.

According to the Central Bank's survey of the estates' deposit balances and how much of them are in term deposit accounts, the portion of the bank tax used to fund the debt reduction package could increase the effective money supply by about 41 b.kr. over a four-year period. As M3 currently amounts to about 1,600 b.kr., this corresponds to an increase of about 2½%. According to the QMM's money demand equation, this increase in M3 corresponds to an estimated 0.23 percentage point decline in market interest rates during the period, not taking into account any monetary policy responses.[8] According to the private consumption equation in the model, this rate reduction should increase private consumption by about ¼ of a percentage point, other things being equal. The estates' fully tied deposits only cover the tax for the first years, however, making the effect on liquidity in circulation relatively front-loaded, as Chart 6 shows.

The upper and lower thresholds of this money supply effect are assessed using the standard deviation of the parameter estimation of the interest rate effect in the QMM's monetary demand equation. According to this, the upper and lower limits of the liquidity effect are interest rate reductions of 0.37 and 0.17 percentage points, respectively. The size of the rate cuts is quite uncertain, however, in part because it is uncertain how much scope for lending the credit institutions already have.

Chart 6
Impact of debt relief measures on effective money supply and long-term market interest rates



Source: Central Bank of Iceland.

Impact on employers' wage costs

Employers' pension contribution expense will rise as more employees opt to avail themselves of third-pillar pension savings. Based on the above-mentioned assumptions concerning increased participation in the third-pillar scheme, it can be assumed that the employer contribution will increase by a total of 1.3 b.kr. per year for three years, or 0.2% of total wage costs. Unit labour costs will rise accordingly and, other things being equal, should raise inflation slightly. Firms can respond to higher wage costs by slowing down recruiting, however, which would tend to mitigate the impact on demand and inflation.[9]

8. See Daníelsson *et al.* (2009). Using the long-term equilibrium of the updated estimation of the monetary demand equation, part of Version 3.0 of the QMM (forthcoming).

9. The labour supply could also increase if more workers enter the labour market in order to take advantage of the temporary tax incentive for third-pillar pension savings. It is difficult to estimate the magnitude of this effect, but the small amount of the tax concession indicates that it is unlikely to be large in scope.

It is assumed that the upper and lower limits of this effect lie in the 0.16-0.23% range, depending on the precise assumptions concerning the impact of the debt relief package on participation in third-pillar pension savings.

Economic impact of the measures: overall effect

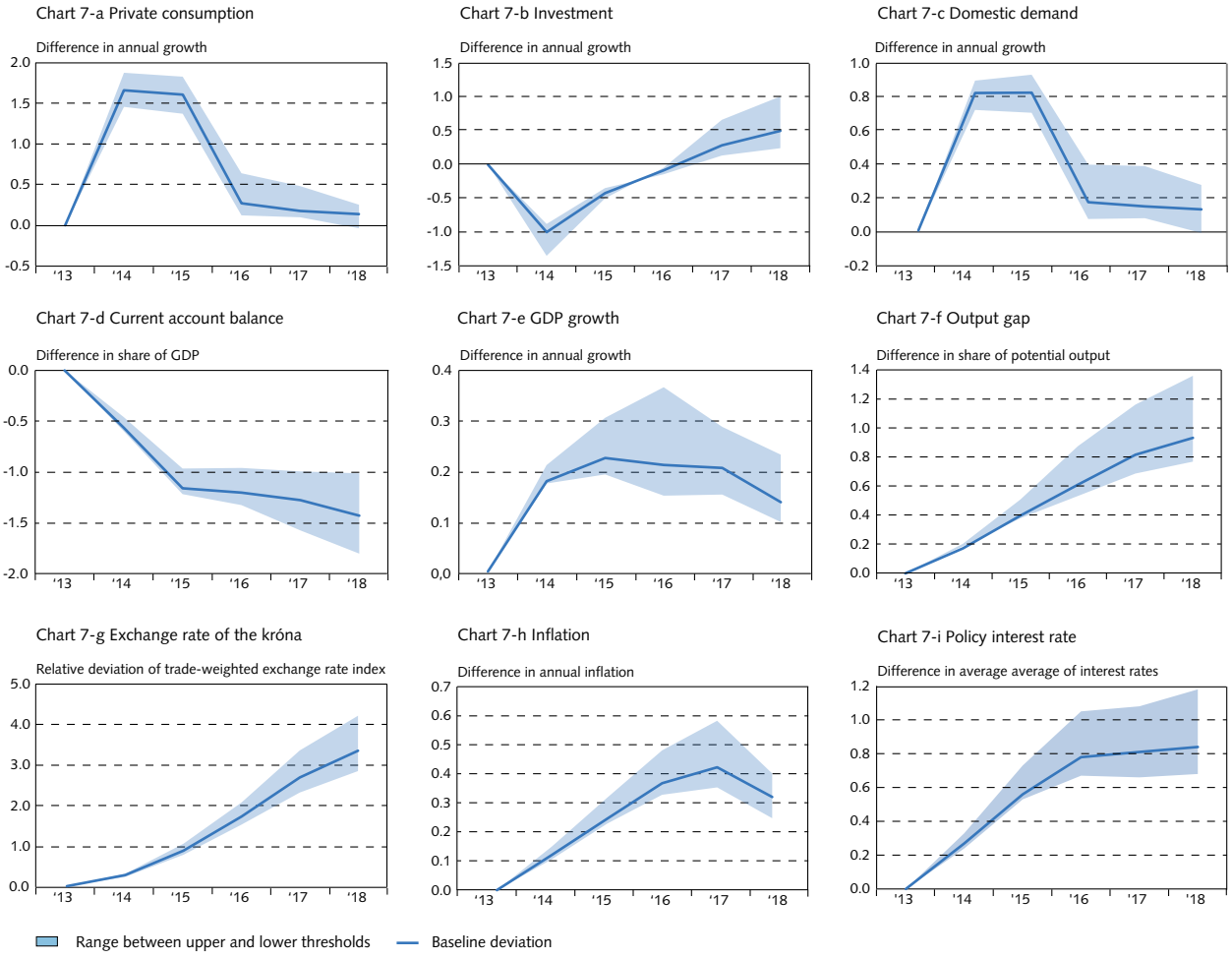
Chart 7 illustrates the overall impact of the debt reduction measures on domestic demand (private consumption, investment, and national expenditure), output growth, and the output gap. It also shows the effects on the current account balance, the exchange rate of the króna, and inflation. Finally, the effects of the measures on the Central Bank's policy rate are shown, as the impact on the economy is based on the assumption that the Bank's interest rate will respond in line with the QMM's monetary policy rule.[10] Without these responses, the impact on demand and inflation would be even greater. The charts present three examples that emphasise the uncertainty about the impact of the measures: the likeliest scenario and two alternative scenarios showing greater and lesser impact. In all instances, the charts represent deviations from the baseline scenario; that is, the situation without any Government debt relief package.

As Chart 7-a shows, private consumption will grow significantly faster in coming years with the debt relief measures than in the baseline scenario. According to the likeliest scenario, private consumption growth will be about 1½ percentage points stronger in 2014 and 2015, whereupon the effects will begin to taper off gradually.[11] It is estimated that, once the full effect of the measures has emerged, private consumption will be nearly 4% higher than in the baseline scenario. Chart 7-b shows the effects on investment. Because of the higher interest rates accompanying the measures, investment will grow more slowly than in the baseline forecast at first (see below). It will grow about 1 percentage point more slowly this year and about ½ a percentage point more slowly in 2015. The negative effect on investment will be greatest in 2016, when the investment level falls to 1½% below the baseline level. From 2017 onwards, however, investment will grow more rapidly than in the baseline scenario, as the effects of stronger economic activity will outweigh the negative effects of higher interest rates. In spite of weaker investment growth, domestic demand will grow more rapidly than in the baseline scenario as a result of the debt reduction measures (Chart 7-c). It will grow about 0.8 percentage points faster in 2014 and 2015 and then taper off gradually, in line with developments in private consumption. When the effects have emerged in full, it will be about 2% higher than in the baseline scenario.

10. The QMM's monetary policy rule is a simple, forward-looking Taylor rule where the Bank's interest rate is determined by expected developments in inflation and the output gap, where past interest rates weigh somewhat heavily and reflect the traditional smoothing of central bank interest rate movements. It should be noted that the analysis of the effects of the debt reduction package does not assume that it will affect long-term inflation expectations (which are determined by the inflation target).

11. It should be noted that the charts show deviations in annual averages from the baseline scenario. The impact on individual variables within a given year could therefore be greater than the charts indicate.

Chart 7
Impact of debt relief measures on various economic variables 2014-2018
Deviation from baseline forecast (percentage points)



Source: Central Bank of Iceland.

Increased domestic demand is associated with stronger import growth, which leads to a smaller current account surplus, as can be seen in Chart 7-d. According to the likeliest scenario, the current account balance will be about ½ a percentage point of GDP less than in the baseline scenario in 2014, and 1.2-1.4 percentage points smaller in subsequent years. Gross national saving relative to GDP (the sum of investment and the current account balance) will therefore decline by nearly 2 percentage points of GDP in the wake of the measures.

A relatively large part of the effect on domestic demand will therefore be directed at imports, which will cause the spurt in demand to leak out of the domestic economy to a large extent. The impact on domestic output will therefore be smaller than the effect on domestic demand. According to the likeliest scenario, output growth will be about 0.2 percentage points greater per year during the period (Chart 7-e). When the effects of the measures have emerged in full, GDP will therefore be about 1% higher than in the baseline scenario. The slack in the economy will be less than it would otherwise, as a result of stronger output growth, and the output gap will be about 1 percentage point greater than in the baseline scenario by 2018 (Chart 7-f).

The increase in imports and the smaller trade surplus will put downward pressure on the króna, other things being equal. This will be offset by higher domestic interest rates, which will support the króna, other things being equal, although the capital controls will weaken this monetary policy channel. As Chart 7-g shows, the exchange rate of the króna will be about 1% lower than in the baseline scenario in 2015 and about 3% lower by 2018.

Stronger domestic demand will lead to stronger domestic inflationary pressures in the wake of the measures. The impact on inflation will be greater than it would be otherwise because the measures are implemented when the slack has almost disappeared from the economy and there is greater risk that the increase in economic activity will contribute more strongly to inflation. The inflationary effects will be more than they would otherwise because the measures entail increased pressure on the exchange rate. In addition to this, unit labour costs will rise, which will lead to higher inflation, all else being equal. According to the likeliest scenario, the impact on inflation will be relatively modest in 2014, but in 2015 inflation will be about 0.2 percentage points higher than in the baseline scenario. The inflationary effects will rise even further in 2016 and peak in 2016-2017, when annual inflation will measure about 0.4 percentage points higher than in the baseline example (Chart 7-h).

As is stated above, it is assumed that the Central Bank's policy rate will be raised in accordance with the QMM's monetary policy rule. This will somewhat offset the effects of the measures on economic activity, the exchange rate, and inflation. Other things being equal, higher interest rates will impede domestic demand (private consumption and investment) and narrow the output gap that develops as a result of the measures. Higher interest rates also provide some support for the exchange rate, and both of these factors will ease the inflationary pressures accompanying the measures. According to the likeliest scenario, the Central Bank's interest rate will be roughly 0.3 percentage points higher in 2014 than in the baseline scenario, and about 0.6 percentage points higher in 2015 (Chart 7-i). By 2016, they will be nearly a percentage point higher than in the baseline scenario. That difference will remain in place through 2018.

Summary

At the end of November 2013, an expert group submitted its proposals for the Government's debt relief measures. The measures are to be implemented over a four-year period, and their total scope is estimated at 150 b.kr., or 8½% of estimated year-2013 GDP.

The debt relief package is expected to have a significant effect on households' financial position and therefore on their spending decisions, as well as on domestic demand and the domestic economy as a whole. Considering all of these factors, the measures are estimated to cause private consumption to grow by a full 1½ percentage points more in 2014 and 2015 than it would otherwise. In part, this increase will crowd out investment, which will contract relative to the baseline scenario over the same period. Overall domestic demand will grow more rapidly than in the baseline scenario, but the composi-

tion of that growth will be different, in that private consumption will constitute a larger share and investment a smaller one. Imports will increase, the current account balance will therefore be about 1-1½ percentage points less favourable than in the baseline scenario, and the GDP growth effect will be less than the effect on domestic demand. GDP growth is estimated to be about 0.2 percentage points more per year. The composition of output growth will not be as favourable as in the baseline scenario, however, as domestic demand will account for a greater share and net exports a smaller one. The measures will also be accompanied by a reduction in gross national saving. Because potential output does not grow in line with demand, the increase in output growth will be reflected in a larger output gap than in the baseline example. A less favourable current account balance will also put increased pressure on the exchange rate of the króna, which is estimated to be about 1% lower than in the baseline scenario in 2015 and about 3% lower by 2018. A larger output gap and a weaker króna will stimulate inflation, which is estimated to be about 0.2 percentage points higher in 2015 and about 0.4 percentage points higher in 2016-2017 than in the baseline scenario. In part, the effects of the debt relief package are absorbed through higher interest rates. According to the QMM's monetary policy rule, the Central Bank's policy rate will be higher than in the baseline scenario by some 0.3 percentage points in 2014, 0.6 percentage points in 2015, and nearly 1 percentage point higher from 2016 onwards. Higher interest rates therefore offset the impact of the debt relief measures on domestic demand, the exchange rate of the króna, and inflation.

Finally, it should be noted that there is unavoidably a great deal of uncertainty about the total impact of the debt relief package, particularly because of the lack of historical precedent for such measures. It is difficult to predict how households will respond; they may save more than is assumed here, or they could step up spending even more. The impact on domestic demand will also depend on how much wage-earners change their participation in third-pillar pension savings schemes. Similarly, the GDP growth effect will depend on how much of the increase in demand is directed at imported goods and services and how much at domestic factors of production. The composition of the economic recovery will also affect the exchange rate, and exchange rate developments will depend in part on how the measures affect the credibility of domestic demand management. The same can be said about the impact on inflation. The inflationary effects will also depend on how much slack, if any, there is in the economy when the demand-side effects emerge, how monetary policy responds, and how credible that response is considered to be. In order to reflect this uncertainty, the analysis reports two alternative scenarios entailing stronger and weaker effects than in the likeliest scenario. According to this range, it appears somewhat likelier that the impact will be stronger than is described here rather than weaker. The uncertainty is probably greater than the difference between the two alternative scenarios indicates, however, as the range does not take account of model uncertainty and how well the macroeconomic model used can account for the effects of measures as broad-based as these. Finally, it is well

to bear in mind that this assessment does not take account of possible Government action to mitigate the negative effects of the measures. Other things being equal, all mitigating measures designed to soften the demand-side effects of debt reduction would ease the inflationary pressures caused by the measures and thereby diminish the need for a monetary policy response. In this context, it should be noted that the monetary policy response described here does not necessarily reflect the Central Bank Monetary Policy Committee's opinion of the best way to apply monetary policy in response to the effects of the debt relief measures. Monetary policy is always formulated on the basis of a comprehensive analysis of economic developments and prospects at the time in question. The impact of the debt reduction measures is only a part of the overall analysis and is not easily separated out from other effects. The fact that this analysis shows that the debt reduction measures will result in higher interest rates than would otherwise occur does not indicate with any certainty how much interest rates will change, or in what direction, at any given time.

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