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This Survey is published on the responsibility of the Economic and Development Review Committee of the OECD, which is charged with the examination of the economic situation of member countries.

The economic situation and policies of Israel were reviewed by the Committee on 2 November 2011. The draft report was then revised in the light of the discussions and given final approval as the agreed report of the whole Committee on 18 November 2011.

The Secretariat's draft report was prepared for the Committee by Philip Hemmings under the supervision of Peter Jarrett. Research assistance was provided by Françoise Correia.

The previous Survey of Israel was issued in January 2010.

BASIC STATISTICS OF ISRAEL, 2010

THE LAND

Area (1 000 km^2)	22.1	Land area (1 000 km^2)	21.6

THE PEOPLE

Population, average (1 000)	7 623.6	Civilian labour force (1 000)	3 147.1
of which:		*of which*:	
Jews	5 753.3	Jews	2 656.7
Arabs	1 554.7	Arabs	407.8
Population under 15 (% of total)	28.0	Employment (1 000)	2 938.2
Population aged 15 to 64 (% of total)	62.2	*of which* (% of total):	
Population over 65 (% of total)	9.9	Agriculture, forestry and fishing	1.6
Population of major urban areas		Manufacturing	14.3
(31 December, 1 000 persons):		Trade (wholesale and retail)	13.3
Tel Aviv district	1 285	Business activity	14.7
Jerusalem district	945	Education, health and community services	28.1
Haifa	541		

GENERAL GOVERNMENT

Present composition of Knesset:		Present Government: coalition	
Kadima	28	Last general election: February 2009	
Likud	27		
Yisrael Beitenu	15	General Government (% of GDP):	
Labor Party	13	Total expenditure	42.6
Shas	11	Total revenue	38.7
Torah Judaism	5	Gross public debt	76.2
Political parties with less than five seats	21		

PRODUCTION

Gross domestic production (NIS billions)	813.0	GDP per capita (NIS)	106 645

FOREIGN TRADE

Main exports (percentage of total value):		Main imports (percentage of total value):	
Diamonds	22.2	Petroleum, petroleum products	14.7
Chemicals and related products	23.1	Chemicals and related	11.6
Telecommunications, sound recording and reproducing	5.9	Machinery and transport	28.3
Electrical machinery and appliances and parts	9.2	Road vehicles	7.4
Petroleum, petroleum products	4.8	Diamonds (gross)	14.4

THE CURRENCY

Monetary unit: New Israeli Shekel		Currency unit per US dollar, average of daily figures:	
		Year 2010	3.7305
		October 2011	3.6849

Executive summary

Israel's economy, including its financial sector, passed through the 2008-09 crisis in reasonable shape but is now being affected by the worsening global outlook; geopolitical tensions are high; and the "tent protests" have added a new dimension to the socio-economic agenda. The Bank of Israel has justifiably switched to a loosening stance in its policy rate.

Analysis for this Survey *underscores a need for attention to other financial issues:*

- *There is a risk that a soft landing in the housing market will not be achieved, and further appropriate macro-prudential actions may need to be taken in response.*
- *The previous downturn revealed weaknesses in the corporate bond market. Stronger regulation should be adopted should the steps taken to increase transparency and improve guidelines fail to substantially strengthen due diligence, which has been clearly insufficient.*
- *The mandatory pension contribution, now set to reach 17.5%, is ample and plans to encourage life-cycle portfolio adjustment are welcome. But the tax treatment of pensions requires reform, and pension products should be simplified.*
- *Financial supervision requires close co-ordination among the various regulators, and intensified monitoring of Israel's large business groups. Capital markets, insurance and savings supervision should eventually be moved out of the Ministry of Finance as part of a broader assessment of financial-market oversight to guarantee its actual and perceived independence.*

Fiscal policy has been sound, but public debt remains uncomfortably high in relation to GDP:

- *Achieving the deficit targets needed to reduce public debt to 60% of GDP by 2020 should remain the top priority, but this level of indebtedness should be viewed only as a milestone.*
- *The new expenditure rule allows a welcome increase in civilian spending over time compared to its predecessor. However, the 2012 budget should not be re-opened, and beyond that horizon substantially faster growth in outlays than allowed by the rule should be resisted because of the economic costs of raising the necessary revenues.*
- *Despite the benefits they would have brought, the likely cancellation of the current schedule of cuts in corporate tax and the upper brackets of personal income tax will help revenues meet deficit targets. However, additional revenue-raising measures will be needed, and these should be sought through advantageous tax reforms (e.g. pruning base-narrowing exemptions, higher environmental taxes) and VAT. Indeed, calls for preferential rates of VAT should be vehemently opposed.*
- *The reform of the royalty/tax regime for natural gas and oil is laudable. An independently managed sovereign wealth fund with an appropriately modest drawdown rate should now be established to ring fence the revenues.*

Shortfalls in education and social policies contribute to Israel's high rate of poverty, especially among Arab-Israelis and Ultra-orthodox Jews, and the associated substantial socio-economic divides, but they also compromise the development of the economy's skill base:

- *Since the in-depth analysis in the previous* Survey, *there has been progress in education reform, but, in particular, Ultra-orthodox schools still need to be more forcefully encouraged to strengthen their pupils' vocational skills. In labour-market and social policy, reforms should include re-introduction of a private-sector placement programme and an extension of the recently decided substantial increase in the earned-income tax credit for mothers.*
- *In-depth review of the housing market in this* Survey *concluded that tax exemptions for homeowners and property investors should be pared back and housing policy focussed more on supporting the rental market and targeted more on low-income households. Legislation that details minimum rights and responsibilities of landlords and tenants should be introduced to encourage development of the rental market.*

Although structural policy settings are generally supportive of business activity, the vigour of market competition is rather weak in a number of sectors:

- *Proposed measures to streamline administrative processes for land planning and property development are welcome, but checks and balances in planning must not be compromised.*
- *In the financial sector, the proposed separation of financial institutions from Israel's large business groups would improve corporate governance and reduce the potential for non-transparent cross-subsidisation.*
- *In the energy sector, stronger policy commitment towards a market-based approach in the electricity sector is needed, starting with an overhaul of the Israel Electricity Corporation.*

As elsewhere, key environmental-policy issues, notably greenhouse-gas emissions, relate to energy use:

- *Economy-wide instruments should be given greater prominence through greater Israeli involvement in international emissions trading and transforming existing duties on primary fuels into a carbon tax.*
- *Public transport should be expanded, while at the same time taxes and charges relating to vehicle use should be aligned more closely with environmental externalities.*

Assessment and recommendations

Israel's economy passed through the 2008-09 global downturn in relatively good shape but is now suffering alongside others from the continuing effects of the renewed global crisis, and geopolitical tensions have increased. So far there have been no major failures in the financial sector or need for any extraordinary fiscal stimulus. This has helped avoid a substantial increase in public debt. Furthermore, there have been substantial new finds of offshore natural gas, which will strengthen the fiscal position, further decrease dependence on imported fuels and improve options regarding energy security. However, the low interest rates generated by the monetary-policy response to the crisis have contributed to a rapid increase in property prices, which are approaching bubble proportions.

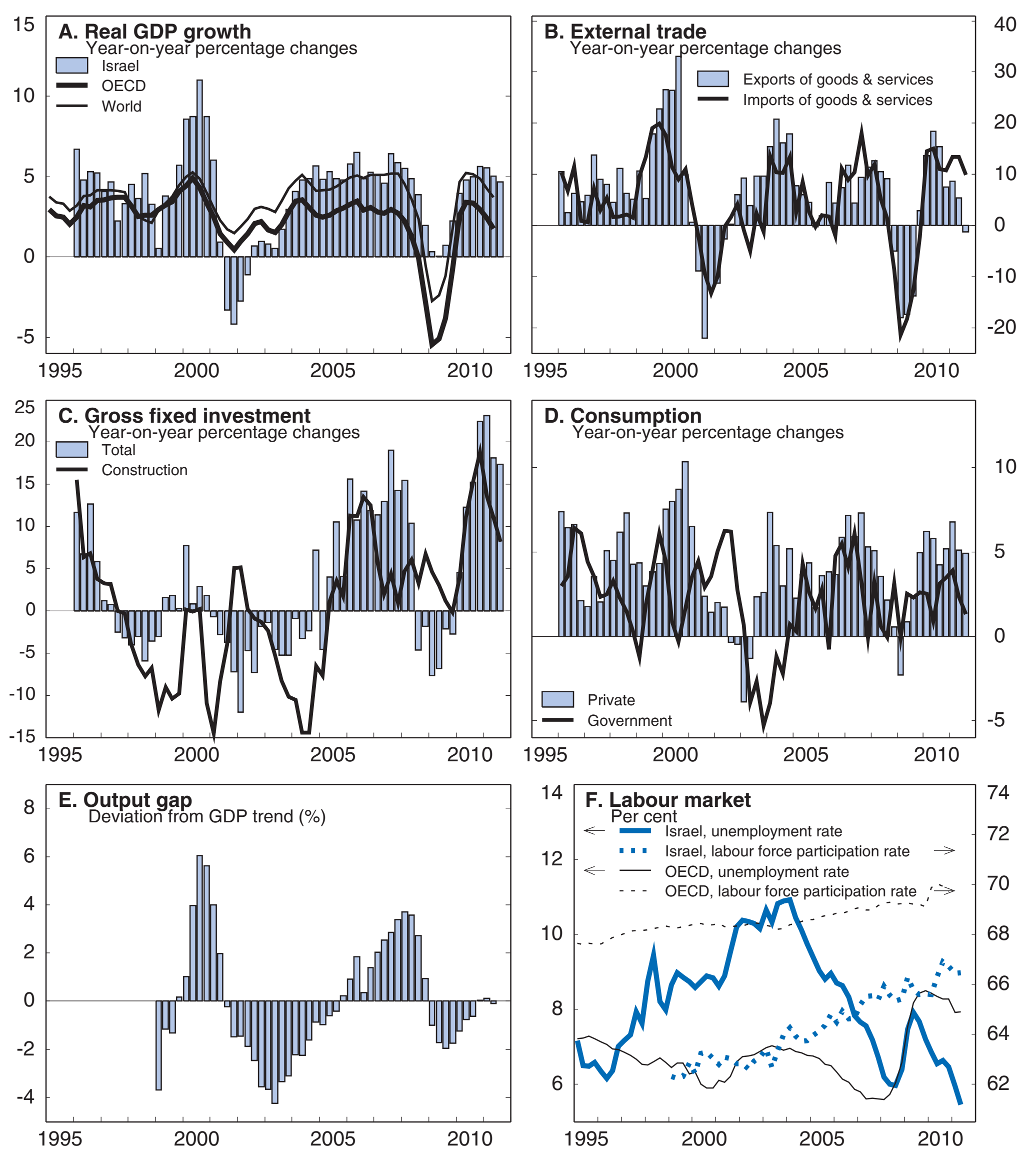
Persistent weaknesses in per capita income growth and a high rate of poverty, especially among certain communities, remain key long-term challenges. In addition, middle-class concerns have surfaced in the form of the recent "tent protests", with complaints about the cost of housing and price levels in other sectors figuring prominently. These concerns are linked to debate about the level of competition in the economy and the role of Israel's large family-run business groups, which play a significant role in the financial sector and in many non-financial sectors too. As of November 2011, the working groups formed in response to the protests (the Trajtenberg Committee) and concerns over the power of business groups (the Concentration Committee) had delivered their initial recommendations. By the time of writing the tax proposals made by the Trajtenberg Committee had been approved by the government but not yet passed by the Knesset.

This assessment examines the challenges facing macroeconomic policy and progress in structural reform in the light of this complex conjuncture. The rapid rise in house prices has prompted the in-depth review of housing-market developments and policy settings (Chapter 1). Chapter 2 takes stock of Israel's financial sector, which, though it has avoided critical breakdown, has nevertheless displayed a few weaknesses and is an integral part of the debate. Developments and implications of the natural gas finds are discussed in Chapter 3 as part of a wider analysis of economic and environmental issues in the energy sector. The policy analysis in this *Survey* does not cover the territories known as the Gaza Strip, the Golan Heights or the West Bank including East Jerusalem.

Growth has been relatively strong, but global developments are weakening prospects

Aggregate economic performance remains strong relative to most other OECD economies. The downturn in activity during the 2008-09 global economic crisis was comparatively mild, and output growth recovered rapidly. Indeed, real GDP increased by 4.8% in 2010 (Figure 1; Table 1), with exports, household consumption and, in particular, investment growing strongly. Performance was particularly helped by the absence of any failure in domestic financial institutions during the crisis. Damage from exposure to foreign toxic debt was limited, and there were no domestically driven problems in credit (nor associated house-price booms in need of correction). However, more recently renewed weakness in the global economy is being felt. Annualised quarter-on-quarter real GDP growth was 4.7% in the first quarter but had slowed to 3.4% by the third quarter. Much of the slowdown came from a deceleration in export growth, as world trade slowed significantly. The November 2011 *OECD Economic Outlook 90* has real GDP growth at 4.7% in 2011 but less than 3% in 2012, with a modest rise in unemployment (Table 1). All private expenditure components, domestic and foreign, should contribute to the slowing.

Figure 1. **A relatively strong recovery but recent slowing**



Source: OECD, *OECD Economic Outlook 90 Database*.

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Table 1. **Short-term economic outlook**

	2007	2008	2009	2010	2011	2012	2013
	Current prices NIS billion	Percentage changes, volume (2005 prices)					
Real GDP	686.5	4.0	0.8	4.8	4.7	2.9	3.9
Private consumption	388.9	2.8	1.4	5.3	4.9	1.6	3.6
Government consumption	169.5	1.7	1.8	2.5	1.6	1.7	2.6
Gross fixed capital formation	130.1	4.4	–4.9	13.7	17.2	8.0	7.5
Final domestic demand	688.5	2.8	0.4	6.1	6.3	2.9	4.2
Stockbuilding[1]	8.3	–0.7	–0.5	–1.4	0.7	0.3	0.0
Total domestic demand	696.7	2.1	–0.2	4.7	7.2	3.2	4.2
Exports of goods and services	291.3	6.6	–11.9	13.6	4.8	3.9	7.8
Imports of goods and services	301.6	2.2	–14.0	12.8	12.7	5.2	8.3
Net exports[1]	–10.2	1.8	1.0	0.6	–2.7	–0.6	–0.4
Memorandum items:							
GDP deflator	–	1.3	5.0	1.2	1.6	2.5	1.9
Consumer price index	–	4.6	3.3	2.7	3.5	2.0	2.1
Private consumption deflator	–	5.0	2.5	2.9	3.9	2.5	2.0
Unemployment rate	–	6.1	7.6	6.6	5.6	6.0	5.8
General government financial balance[2, 3]	–	–3.8	–6.4	–5.0	–4.0	–3.8	–3.5
Gross government debt	–	77.0	79.4	76.0	74.6	73.8	72.4
Current account balance[2]	–	1.1	3.5	3.0	–0.8	–1.4	–1.7

1. Contributions to changes in real GDP (percentage of real GDP in previous year), actual amount in the first column.
2. As a percentage of GDP.
3. Excluding Bank of Israel profits and the implicit costs of CPI indexed government bonds.

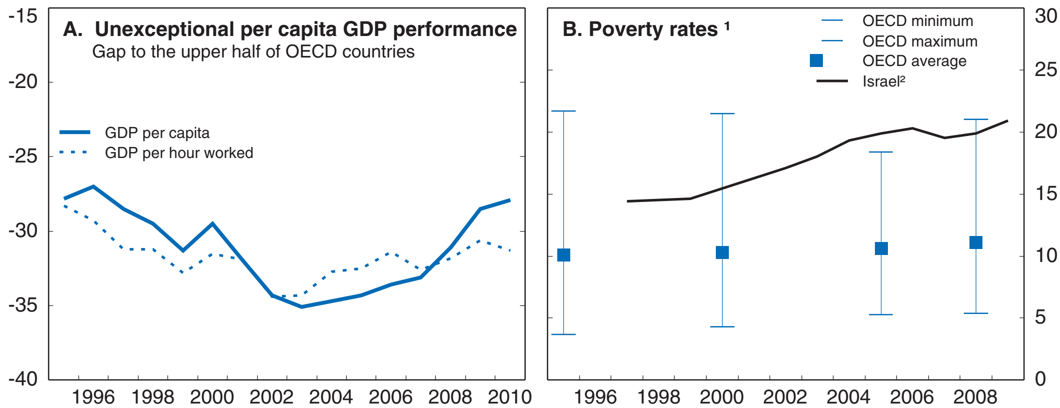
Source: OECD, *OECD Economic Outlook 90 Database*.

Current uncertainties and risks also influence the outlook beyond 2011. Prior to the deterioration in prospects for the global economy, concern in Israel was strongly focused on the risk of supply constraints. Room for increases in labour input has certainly diminished: the unemployment rate has already reached a historic low (5.5% in the second quarter of 2011), while the participation rate has also risen. Yet, international comparison suggests that the participation rate could certainly rise further. Nevertheless, given recent developments, the role of these constraints has waned, and with that so have future inflation pressures.

Challenges in long-run productivity performance and poverty remain

While aggregate performance has been impressive, growth in GDP per capita and labour-productivity growth have been less so (Figure 2). However, gaps in income per capita and labour productivity in relation to the top half of the OECD have been narrowing since 2003, which is encouraging and may herald a sustained period of catch-up in the years ahead. Nevertheless, Israel's deep socio-economic cleavages show few signs of narrowing, and the poverty rate, the highest in the OECD area, is again rising (Figure 2; see also, OECD, 2010a; OECD, 2010b; Bank of Israel, 2011, Chapter 8; National Insurance Institute, 2010). The Arab-Israeli population (particularly specific communities, such as the Bedouin) and Ultra-orthodox Jewish communities account for about 60% of poor households. Arab-Israelis make up about 20% of the population and Ultra-orthodox about 10%, but high fertility among both groups means that in combination they account for about half of the children entering primary school. For many observers the problem of high and rising poverty is a cause for significant social concern in itself. However, it also

Figure 2. **Core challenges for the longer term**



1. The poverty rate used here represents the share of individuals with "equivalised" disposable income less than 50% of the median for the entire population where equivalisation is based on the OECD method of weighting household members according to the square root of household size (see Chapter 4). The values for 1998, 2000 and 2001 are interpolated. The reference years for the OECD poverty rates vary somewhat by country; the data points shown refer to the "mid-1990s", "around 2000", the "mid-2000s" and 2008.
2. Provisional data for 2009.

Source: OECD (2011), *Economic Policy Reforms 2011: Going for Growth*; and OECD (2011), *Society at a Glance*.

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reflects a failure to realise the full potential of human capital resources, and the poverty issue is therefore linked to that of economy-wide catch-up in GDP per capita. Hence, ensuring propitious conditions for a sustained and more inclusive catch-up in per capita outcomes must remain a primary goal of economic policies.

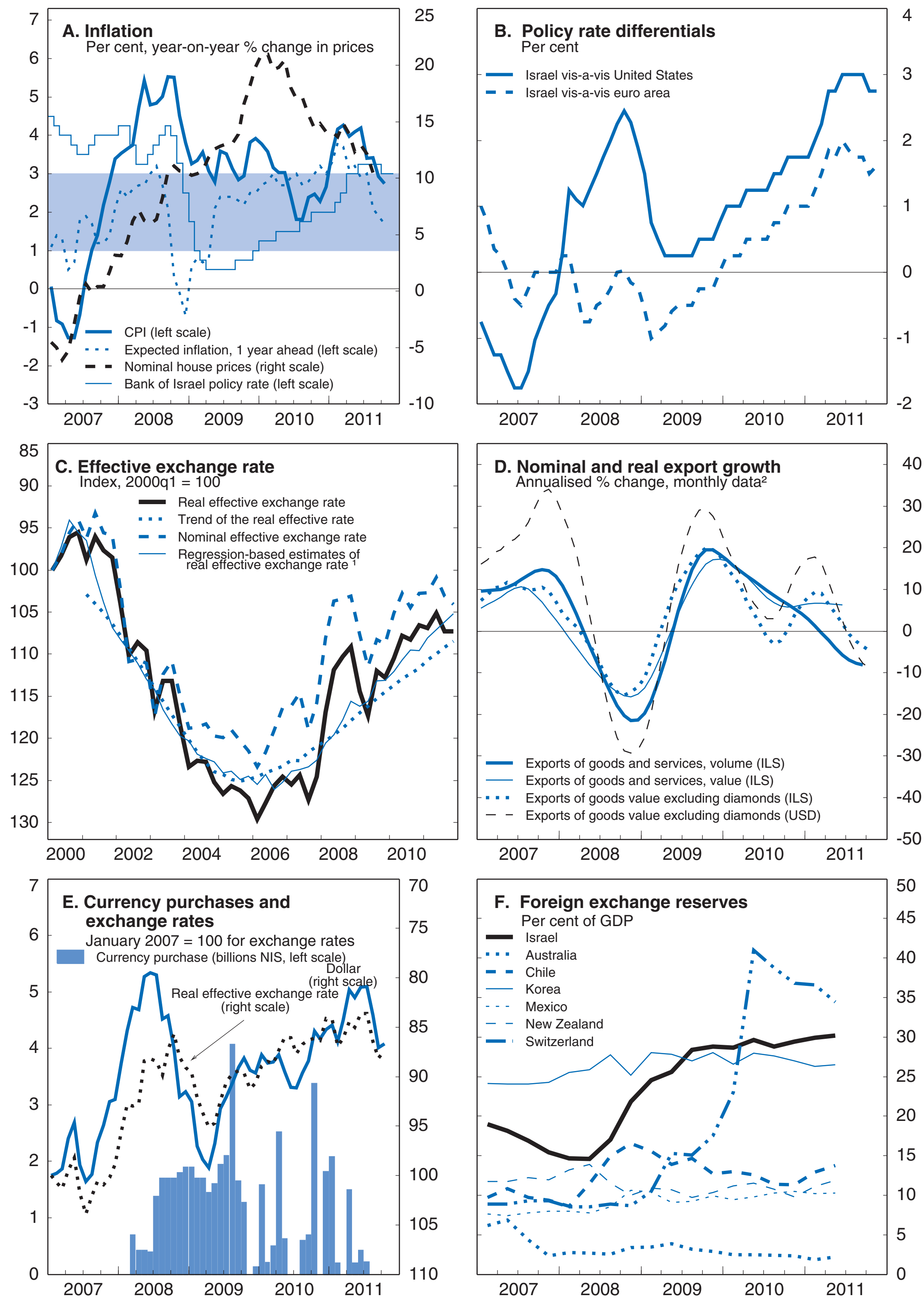
Monetary policy and financial stability

An unusual and difficult conjuncture for monetary policy…

Similar to other small open economies Israeli inflation is subject to substantial variation. Indeed, more often than not outcomes are outside the target band (1-3% growth in the CPI; see Figure 1). In recent quarters, for instance, inflation has been affected by global developments in oil and food prices and by relatively rapid increases in the housing component of inflation, which primarily reflects growth in rents. The latter used to move lockstep with the shekel-dollar exchange rate because the vast majority of rental contracts were specified in US dollars. However, following a wholesale switch to shekel-denominated rents, recent increases reflect the sharp rise in house prices. Price increases have been fuelled by a drop in mortgage interest rates following the deep cuts in the central bank's policy rate to 0.5% in the wake of the global crisis. The rate of increase in house prices has declined from peak values in 2010 and other data point to a more pronounced softening of the market in recent months.

The house price increases, combined with relatively robust real GDP growth, favoured an early start to raising the policy rate towards a more "normal" range of values (estimated to be between 4 and 5%, Bank of Israel, 2011, p. 113). The first post-crisis rate hike was in September 2009, and by June 2011 the policy rate had reached 3.25% (Figure 3). However, the rate rises encouraged currency appreciation, with the growing interest-rate differential with major currencies playing a key causal role. This raised concerns that the export sector was suffering losses in profit and market share due to unusual circumstances, rather than through fundamentals-driven shifts in the exchange rate, which have themselves been

Figure 3. **Current issues for monetary policy**



1. For details on the regression-based estimates, see main text.
2. Data have been smoothed with Hodrick-Prescott filter. Monthly data for exports of goods and services (value and volume) have been interpolated from quarterly data.

Source: Central Bureau of Statistics; Bank of Israel; IMF, *International Financial Statistics Database*; OECD (2011), *Economic Policy Reforms 2011: Going for Growth*; and OECD, *OECD Economic Outlook 90 Database.*

StatLink http://dx.doi.org/10.1787/888932539099

providing a headwind to exporters in recent years. Figure 3, Panel C shows the predicted values of a regression estimated by the Bank of Israel that includes the per capita output gaps of Israel and the United States and the terms of trade. The implications of these forces is most clearly seen in the shekel value of goods exports (excluding diamonds which account for a large share of trade but only a small share of value added), where growth has indeed been relatively weak in recent quarters (Figure 3).

… was tackled by combining rate hikes with currency intervention

In an effort to strike a compromise between domestic price pressures and concern for the export sector, the Bank of Israel combined policy-rate rises with interventions in the foreign-exchange market. Regular pre-announced daily foreign-currency purchases were conducted from early 2008 to mid-2009. Since then intervention has been conducted on a discretionary basis. Initially, the Bank stressed that the interventions were to build foreign-currency reserves, but later justifications underscored the role of intervention in shielding the export sector in particular from the exchange-rate impact of heavy short-term capital flows (see Eckstein and Friedman, 2011; and Sorezcky, 2010). This can be seen, for instance, by the rise in the share of short-term Bank of Israel securities (*makam*) held by non-residents from 1% at the end of 2008 to 28% at the end of 2010 (Bank of Israel, 2011, Chapter 3). The interventions were accompanied by new reporting requirements on foreign-exchange swaps and derivatives, a reserve requirement on banks against transactions with non-residents in foreign-exchange derivatives, and abolition of a tax exemption for non-resident investors on profits on short-term securities issued by the Bank of Israel and the government.

The currency intervention implies monetary policy became less single-mindedly focussed on hitting the inflation target. Indeed, there were worrying increases in inflation expectations. Notably, from mid-2009 to mid-2011 inflation expectations one year ahead implicit in capital-market outcomes were typically close to or above the upper bound of the 1-3% target band (Figure 3), suggesting declining policy credibility. For small economies, such as Israel, currency intervention has no global implications, and there may be little alternative when foreign monetary policy settings are necessarily extreme. But a number of other countries have also taken unilateral action to affect exchange rates or capital flows. While these measures were introduced to achieve legitimate domestic policy goals, if such policies were to become more generalised, they could collectively have negative spillover effects on global trade and capital allocation.

Intervention should be viewed as a temporary measure to deal with unusual circumstances. Indeed, for Israel currency intervention has become somewhat less relevant recently as reduced growth prospects and falling inflation led the Bank to leave its policy rate unchanged from June to September and lower it for October. And, for the near term at least, rate hikes and therefore further widening of the interest-rate differential no longer seem likely. Indeed, the projection shown in Table 1 is conditional on further monetary loosening in the near term. Monetary-policy relaxation, combined with reaction to other global economic developments, has brought substantial depreciation of the shekel. According to the latest available data, the Bank of Israel has not made foreign-currency purchases since July 2011.

Changes to the Bank of Israel's modus operandi continue

New legislation governing the Bank of Israel came into force in 2010, which has clarified that the Bank's policy objectives include the pursuit of secondary goals in support of government policy (in particular, economic growth and the reduction of social inequalities) as long as this does not impair the primary goal of price stability, nor the efficiency and stability of the financial system. The legislation also laid out a new framework for rate-setting decisions by vote of a monetary-policy committee. This became operational in October 2011. The Monetary Committee comprises the Governor plus two other bank staff and three external members (the Governor has a casting vote). Another new body, the Administrative Council, whose duties, *inter alia*, include approval of the budget and work programme of the Bank, became operational at the same time.

Additional steps are being taken to cool the housing market

Rapidly rising house prices have been not only a factor in rate-setting decisions but also the subject of welcome macro-prudential measures: loan-loss provisions for mortgage lending have been ramped up, and the variable-rate component of any mortgage limited to one third. In addition, purchasing property for investment purposes has been made more costly through an increase in transactions taxes, while the sale of investment property is being encouraged by a temporary exemption from capital gains tax. In addition to these macro-prudential measures, approval of new housing development has been expedited (see below).

Increases in prices have eased, if not stopped altogether, and warning indicators (such as the price-to-rent ratio, see Chapter 1) have not yet reached what are thought to be critical levels. Furthermore, the macro-prudential measures have added additional margins of safety to already conservative mortgage-lending practises. Nevertheless, there is still a risk that a soft landing may not be achieved and house prices (and loan repayments) in relation to rents and incomes may reach "bubble" proportions, heightening the risk of a sharp and damaging correction. In this event, further macro-prudential tightening and faster land release by the Israel Land Authority would be warranted. On the other hand, the early signs of weakness may presage an imminent sharper-than-desired decline in prices, which would call for measures in the opposite direction.

There is room to improve financial supervision

The measures taken in reaction to housing-market developments reflect a broader and welcome recognition of the importance of macro-prudential oversight and action. Stress tests in banking are also being made more rigorous, and the authorities aim to publish periodic financial stability reports. However, there is room for improvement:

- Responsibilities in the current three-agency structure are divided along institutional lines (banks, non-banking institutions and capital markets). While this has some advantages, it requires strong co-ordination to ensure that cross-cutting issues are properly covered. The supervisors meet regularly now, but continuing efforts are needed in this area.
- The Capital Markets, Insurance and Savings Division is under the direct authority of the Ministry of Finance. To date, supervision has been good, and the Division appears to enjoy satisfactory autonomy. Indeed, the arrangement has the benefit of allowing it to draw on the considerable clout of the Ministry. While independence has not been

compromised, the risk nevertheless remains, and for this reason the Division should eventually be moved out of the Ministry, although this change should be considered as part of an overall assessment of the supervision of the financial system.

- Business groups play a prominent role in the financial sector and in the Israeli economy as a whole (see below). While they are already scrutinised to some extent, a dedicated unit within one of the existing supervisory bodies or a permanent working group comprising representatives from each of the supervisory bodies would help ensure this dimension of financial supervision is comprehensively monitored and not just when a special working group is appointed.

In banking, planned legislation to allow securitisation should proceed cautiously

The loan-loss provisions in mortgage regulation, along with the absence of securitisation, reflect a broadly conservative approach to banking. This certainly helped Israel to avoid the type of problem that contributed to the global financial crisis. Conservative banking is also reducing the risk that the house-price boom could generate an unsustainable and potentially destabilising level of household credit. However, it has meant the financial system lacks some features that can improve market efficiency without boosting risk excessively if properly regulated and supervised. In light of international experience, plans to allow securitisation should nevertheless proceed with a good deal of caution.

Corporate bond markets remain the major concern

Over the past decade, Israeli non-bank credit in the form of corporate bonds has increased markedly; then, during the 2008-09 crisis, the market dried up completely. This drew attention to problems of thin trading volumes, deficient information flows in issuance and risk assessment, and a lack of orderly default processes. In response, new regulations have been introduced to strengthen diligence, especially by institutional fund managers. Such funds, which hold a large share of corporate bonds and manage most household savings and pension plans, are subject to new guidelines on side conditions ("covenants") in bond contracts, for instance. Issuers of company bonds have also been subject to tighter regulation, including new reporting requirements and measures to improve debt-default procedures. However, concerns remain about investment risks remain, particularly in (uncollateralised) corporate-bond financing in the real-estate and construction sectors. Thus far measures have endeavoured to improving transparency and influence behaviour largely through guidelines. A more pro-active approach should be taken if fragilities in the bond market persist.

The framework for saving in institutional funds could be improved

First-pillar pension provisions in Israel are limited, and therefore many households count heavily on the proceeds from their own investments in pension-type products for their retirement income. While the pension system has laudable features, not least a relatively light fiscal burden, there are issues:

- A mandatory minimum pension was introduced in 2008, envisaging a contribution rate of 15% once the scheme was fully operational. In 2010 this was increased to to 17.5%, which is high in international comparison (even allowing for the fact that 5 percentage points of the contribution doubles as severance insurance) and implies fairly high replacement rates for those on low incomes. The contribution is therefore ample, and no further hikes in the contribution rate are warranted.

- The mandatory contributions have been introduced without changing the tax benefits to long-term saving, such that employees continue to receive tax breaks on the mandatory component, which is wasteful from a policy perspective. In addition, the tax benefits are regressive and typically of no value to low-income households. This too should be re-examined.
- The provision of tax incentives across a broad range of long-term savings products has merit, but the resulting complexity means that many households probably find it difficult to make well informed choices. Plans to introduce default portfolio guidelines that reduce exposure to risk as the policy holder ages ("life-cycle portfolio adjustment") are therefore welcome. This will help simplify the array of pension products, but additional streamlining and simplification are needed, and removal of access to preferential-rate bonds for some types of pension should be considered.

Box 1. **Core recommendations on monetary policy and financial-market regulation**

- End intervention in the foreign-currency market, unless needed to counter destabilising capital inflow surges.
- Take further macro-prudential actions should the housing market fail to achieve a soft landing.
- Strengthen co-ordination in financial supervision: establish a specialised unit or permanent working group to scrutinise business groups; and eventually remove the Capital Markets, Insurance and Savings Division from the authority of the Ministry of Finance as part of a broader assessment of financial-market supervision (Chapter 2).
- As regards specific financial products: proceed cautiously with securitisation, adopt more rigorous regulation of bond markets should fragilities persist, reform the taxation of second-pillar pension saving, and do not increase mandatory pension provisions any further beyond currently planned rises (Chapter 2).

Fiscal policy

The absence of bailouts of financial institutions, the relatively mild downturn in economic activity in 2008-09 and the speedy recovery thereafter have helped Israel avoid the challenging fiscal situation facing a number of other OECD economies. Nevertheless, there remain sharp trade-offs in fiscal-policy objectives between debt reduction, spending control and tax reform, which have been heightened by pressures from the recent wave of popular protests.

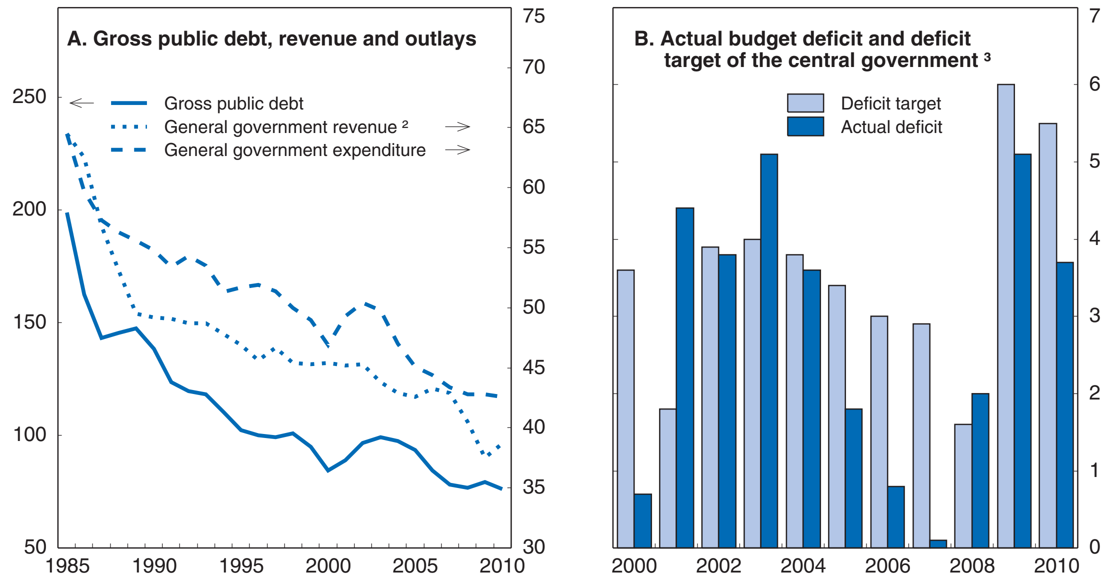
Debt reduction should remain the top priority

Successive governments had until recently pursued a "textbook" fiscal strategy of prioritising schedules of income-tax cuts and debt reduction (via deficit targets) through a tight lid on spending and increased use of indirect taxation. The returns from this strategy have been significant. The debt-to-GDP ratio has fallen to 76% of GDP, and the overall "size" of government and level of income taxation have been brought down from high levels (Figure 4).

Nevertheless, further debt reduction is needed. The government's implicit goal of reducing debt to 60% of GDP by 2020 by cutting the deficit to 1% of GDP by 2014 (and holding it at this level thereafter) is sound. However, the 60% target should be regarded as only milestone in consolidation, and a lower target should be adopted at some point. This would

Figure 4. **Fiscal outcomes**[1]

Per cent of GDP



1. The deficit data represent commonly used national definitions of the government's deficit that do not take account of the implied indexing costs from indexed government bonds. The ratio of debt to GDP is the same in the national and the internationally comparable definitions.
2. Including Bank of Israel profits. From 1995, including an expenditure of 1.5% of GDP due to the State Health Law.
3. Excluding net credit.

Source: Bank of Israel (2011), *Annual Report 2010*, Statistical Appendix.

StatLink http://dx.doi.org/10.1787/888932539118

ensure further lowering of interest payments and mean an ample buffer to external shocks and the fiscal impacts of aging. In broad terms the authorities have a good track record in reaching their targets; deficit outcomes have rarely exceeded targets in recent years (Figure 4), although the targets for 2009 and 2010 were revised up significantly and outcomes were substantially above the original targets. Nevertheless, overall fiscal performance over the longer term suggests the authorities are capable of the required fiscal discipline to adhere to the deficit track. Political pressure to relax the deficit target for 2012 contained in the two-year budget in the wake of the tent protests should be strongly resisted.

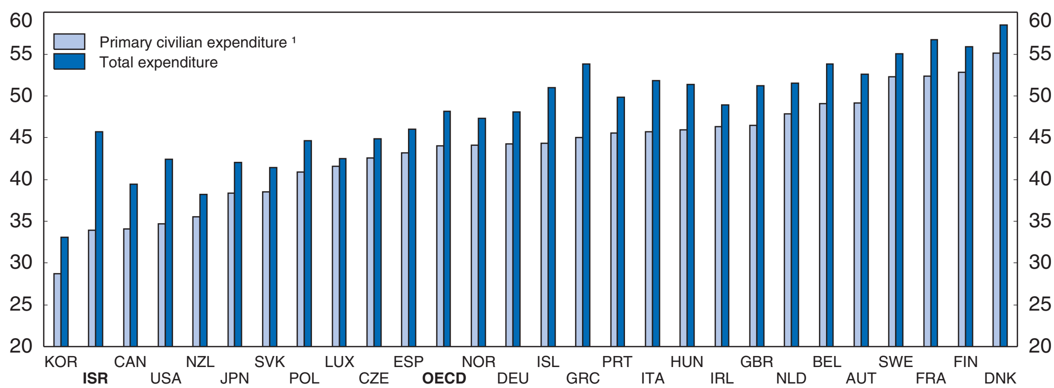
Faster spending growth under the new fiscal rule is welcome

In addition to the deficit targets, budgeting is guided by a fiscal rule that sets the maximum growth rate in central-government spending. Beginning from the 2011-12 budget a new rule was introduced, which anchors spending to the goal of a 60% debt-to-GDP ratio by linking growth in outlays to past GDP increases and the most recent outcome for the public debt. Specifically, the ceiling on spending growth equals average growth in real GDP over the previous ten years multiplied by the ratio of the target debt-to-GDP ratio (60%) to the latest available annual ratio. Importantly, the new rule implies that spending increases will typically be higher than under the old rule, which fixed real spending growth at 1.7% per year. For example, the 2011-12 budget was based on real increases of 2.7% each year. Despite the rule, the authorities have some room for discretion. In particular, one-off expenditure items ("boxes") have often been created that are not included in the ceiling calculation (see OECD, 2010a and Bank of Israel, 2010a).

Government spending has been severely compressed in recent years. Total public spending as a share of GDP has been driven down to close to the OECD average, but primary civilian spending has reached one of the lowest levels in the OECD area, reflecting Israel's large defence needs (Figure 5). Low hanging fruit for efficiency gains and cutbacks in public services have probably been picked; parsimony in transfers is contributing to the high rate of relative poverty, and there is a risk of excessive postponement in the implementation of plans to expand public infrastructure (notably transport). Public-sector pay and conditions in some occupations may have been driven below levels required to adequately retain and motivate existing staff and attract sufficient new entrants.

Figure 5. **Primary civilian and overall government expenditure**

As a percentage of GDP, 2009 or latest available year



1. Excluding defence and interest payments. Calculation of the primary civilian spending uses an estimate of defence spending for that year.

Source: OECD, *Annual National Accounts Database* and OECD, *OECD Economic Outlook 90 Database*.

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In this light, the higher spending growth under the new rule is welcome, and substantial curtailment of spending growth below that allowed by the ceiling should be avoided. Equally, however, pressures for a substantially faster pace of discretionary spending growth should be resisted. The revenue challenges in meeting the deficit target are already significant (see below) and could be insurmountable at a faster pace of spending increase. Despite pressures arising from the tent protests, there are welcome indications that the authorities intend to maintain the ceiling and are, for instance, investigating channels for economies in the defence budget to create room for additional spending in the social sphere.

Near-term prospects in fiscal performance have weakened

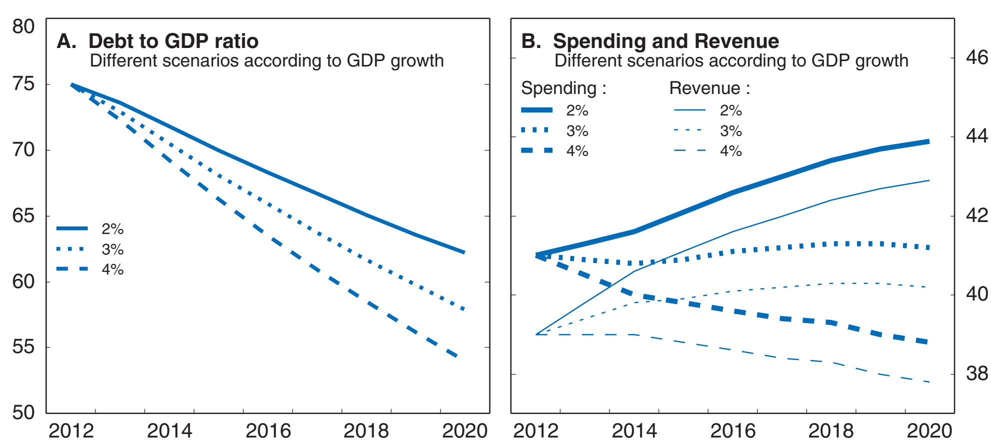
Near-term prospects in fiscal performance have weakened due to the emerging downturn. When growth prospects were somewhat stronger, the deficit for 2011 was expected to be a good margin below the 3% target in the central-government deficit, despite the reversal of some revenue-raising measures. These included postponement of an increase in excise duty on gasoline and smaller increases in water prices. The decisions followed demonstrations by the public at large in early 2011 about rising living costs and were accompanied by commitments to increase subsidies to public transport and hikes in the minimum wage. With the weakening of growth prospects, the deficit for 2011 is now expected to be close to the 3% target and will probably overshoot the 2% target for 2012. The latest OECD projection (Table 1), for instance indicates only 0.2 percentage point of fiscal consolidation in the general-government deficit in 2012, which is well short of the 1 percentage point that will likely be required to reach the central-government target. On the basis that the current downturn is cyclical, rather than structural, the overshoot should be viewed as reflecting the healthy operation of automatic stabilisers. However, it would not be advisable to engage in spending measures for 2012 that would exceed those contained in the two-year budget.

Ensuring revenues remain on track in the longer term remains a core challenge

Medium-term simulations indicate it is likely that the authorities will have to take active measures to increase total revenues as a share of GDP to square their deficit and spending goals. There is little doubt that sticking to the deficit goals will bring the debt-to-GDP to 60% within a reasonable time frame. Assuming 3% average real growth (which approximates historical growth in GDP per capita plus projected population growth), the 60% target will be reached by 2019 and by about 2018 at 4% growth and 2021 at 2% growth (Figure 6). Given the mechanics of the rule, whether spending rises or falls as a share of GDP depends crucially on the pace of growth in relation to its long-run historical average and the debt-to-GDP ratio. Importantly, Figure 6 underscores that at 3% growth spending will remain roughly constant as a share of GDP. Nevertheless an increase in the share of revenue in GDP is required if the goal of a path of declining deficits is to be met. Higher average output growth is required if revenues are to remain constant or fall as a share of GDP.

Figure 6. **Fiscal scenarios with adherence to the deficit targets and new spending rule**

As a share of GDP



Source: OECD calculations from *OECD Economic Outlook 90 Database.*

StatLink http://dx.doi.org/10.1787/888932539156

Following the recommendations of the Trajtenberg Committee (Table 2), in October 2011 the government approved a package of tax measures that includes the replacement of scheduled cuts to personal and corporate income tax rates with increases. As well as increasing the burden and progressivity of direct taxation, the package also reduces indirect taxation and provides more support to families. Indeed, it includes all of the Committee proposals, except the increase in employers' social-security contributions. However, at the time of writing the reform had not passed the Knesset, and therefore the final package may depart further from the Trajtenberg recommendations.

Table 2. **Key features of the Trajtenberg Committee's recommendations**

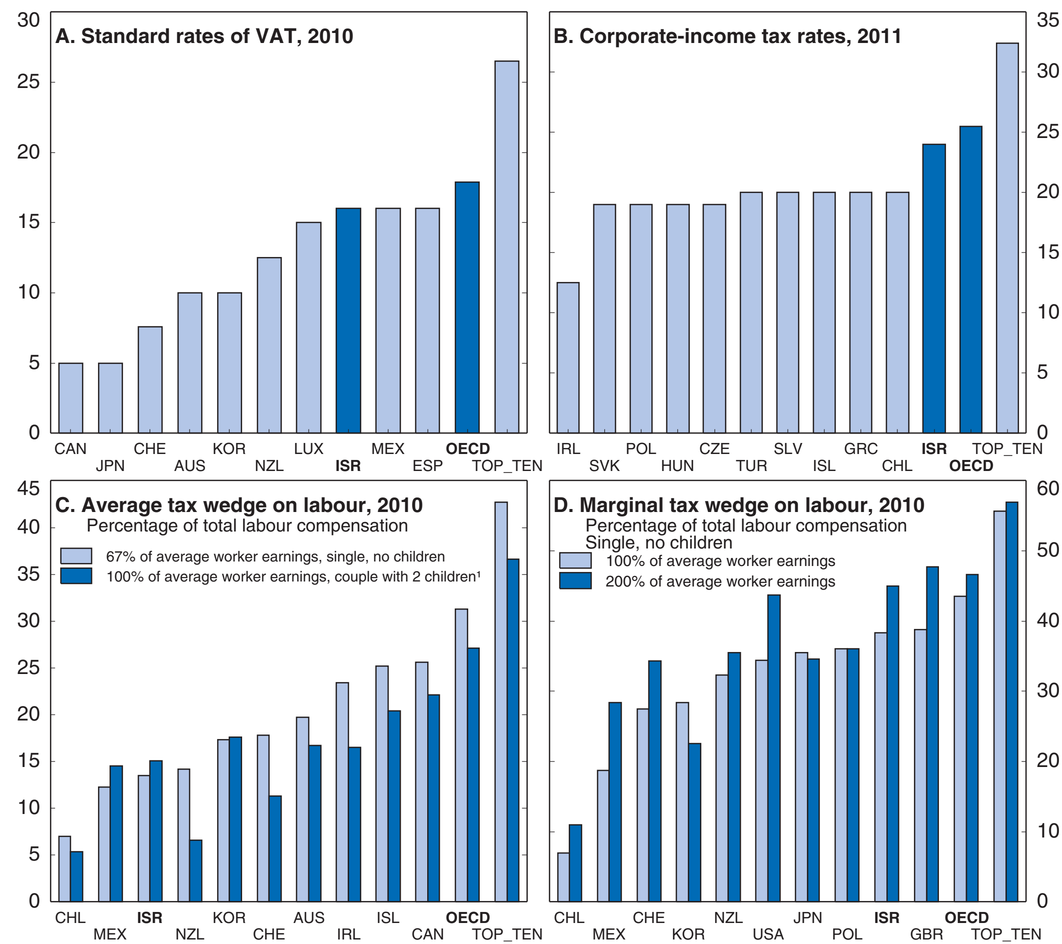
Revenue-related measures	Budgetary impact (annual), NIS billion[1]
Cancellation of scheduled income-tax rate cuts	
● The rate of corporate tax was due to fall from its current value of 24% to 18%, and, for example, the top rate of personal income tax was to be cut from the present value 45% to 39%, both by 2016.	+2.5
Increases in top personal-income tax rates	
● Increase in the top rate from 44 to 48% (the rate applies to taxable monthly income of more than NIS 40 231, which is around five times the average wage).	+0.7
● Imposition of an additional 2% tax on those with income over NIS 1 million per year (*i.e.* NIS 83 333 per month equivalent, which is around ten times the average wage).	+0.4
Changes to social-security contributions	
● Reversion of the ceiling on employee social-security contributions to five times the average wage (the ceiling had been increased to nine times the average wage as a temporary measure in the wake of the 2008-09 downturn).	–0.8
● Increase in employers' national-insurance contribution rate for those earning above 60% of the average wage from 5.68% to 7.5%.	+2.5
Increases in corporate-income and capital-gains taxation	
● Increase in corporate-income tax from 24 to 25% (and possibly later to 26%).	+1.4
● Increase in capital-gains tax from 20 to 25%.	+1.3
Changes to indirect tax	
● Cancellation of a scheduled increase in excises on gasoline and diesel.	–2.5
● Commitment to a scheduled cut in import duties, except on cars and agricultural produce.	–1.5
● Cancellation of the scheduled cut in VAT from 16 to 15.5%.	+2.5
Additional tax breaks for families	
● Extension of child tax credits to fathers (previously only mothers were eligible).	–1.0
● A 50% increase in the earned-income tax credit for mothers.	–0.8
Net budget impact of revenue-related measures (excluding increase in the employers' social-security contribution)	**+2.2**
Measures requiring additional public spending	
Expansion of child care and early childhood education	
● Increase in public spending on daycare services for children aged up to 3 years; introduction of free compulsory education from age 3 to 5; additional after-school services; reduction in school fees.	–4.0 (approximate)
Targeted schemes for minorities	
● A number of schemes are proposed, all of which aim to encourage the integration of minorities into the workforce, particularly Arab-Israeli women and Ultra-orthodox men.	*n.a.*
Additional measures to lower housing costs	
● Several schemes are proposed, for instance affordable long-term rental housing units, increased rent subsidies, increase in property tax on empty apartments.	*n.a.*
Total budget impact of additional public spending (based on a figure of NIS 30 billion for the first five years)	**6 (approximate)**
Economies in public spending	
● Annual defence spending cuts of NIS 2.5 billion (from baseline) for five years.	+2.5
● Privatisation of public services with a view to efficiency gains and cost savings.	*n.a.*
● Greater efforts to ensure efficiency and co-ordination in policy planning and implementation.	*n.a.*
Total budget impact of economies in public spending	**+2.5**

1. Estimates by the Trajtenberg Committee.

Past cuts in personal and corporate rates have already driven the average tax wedge on labour to a relatively low level in international comparison, and marginal rates (even at twice the average wage) are now close to the OECD average (Figure 7). These developments, combined with the fact that the proposed tax-rate increases are relatively modest, suggest

Figure 7. **Tax indicators**

Comparison with bottom ten OECD countries



1. Average of three situations regarding the wage of the second earner (0%, 33% and 67%).

Source: Bank of Israel, Statistical Annex of the *Bank of Israel Annual Report* (2010); OECD, *OECD Tax Database*; and OECD, *Taxing Wages Database*.

StatLink http://dx.doi.org/10.1787/888932539175

that any erosion of competitiveness will be small. However, substantial additional hikes in direct taxation (or social contributions) over and above those proposed by the Trajtenberg Committee, as called for in some quarters, should be avoided. High rates of personal-income tax (or employee social contributions) on top earners can be problematic because they can prompt tax evasion and elicit little in the way of additional revenues. Indeed, this is one reason why the authorities decided to reduce the ceiling on social-security contributions as part of the package. Furthermore, large additional increases in direct taxation would risk significant damage to growth outcomes through harmful impacts on competitiveness and labour supply.

The Trajtenberg Committee also made recommendations that have implications for public spending (Table 2). Proposals include increased support for families (particularly those with at least one worker). In addition, there are a number of proposals to lower housing costs and increase integration of minorities into the workforce. As of November 2011, there was only limited progress in gaining government and parliamentary approval of these measures, and the timing and scale of related additional spending is uncertain. Finally, the Committee proposed partly funding the additional spending associated with these programmes by cuts in defence outlays (these have been approved by the government in principle) and recommended ways of achieving efficiency gains and savings in public spending.

Implementation of the Trajtenberg Committee's recommendations will not diminish the risks to achieving the fiscal targets. The Committee was mandated to remain within the spending limit, and did so, which is welcome. In addition, for 2013 onwards its recommendations would result in a net increase in revenues equivalent to the impact of the cancellation of the scheduled tax cuts on the revenue baseline (for instance this would amount to NIS 11 billion by 2016). However, under prudent economic growth assumptions, these increased revenues are probably not enough to ensure the deficit (and debt) targets are met if spending is to increase according to the new rule (Bank of Israel, 2010b). Hence, unless average growth in the coming years outperforms the historical average then, the authorities will require additional revenue measures.

As regards direct taxation, competitiveness concerns limit the scope for significant new revenue-raising measures in addition to those already in the Trajtenberg proposals. This said, there are avenues for changes to income or capital-gains tax that provide a double dividend in terms of revenues and structural reform. For instance, the in-depth examination of the housing sector for this survey identifies excessive exemptions of capital gains.

Indirect taxes can also play a role in ensuring adequate revenues. Here too there are opportunities for double-dividend reforms. For example, in the energy sector existing excise tax on primary fuels could be increased to reflect environmental externalities and greater recourse made to taxes and charges relating to car use (in terms of fuel excise, the government's adoption of the Trajtenberg Committee's recommendations implies, unfortunately, the abandonment of moves in this direction, see Table 2). Indeed, "green taxation" in general may well provide a number of modest win-win revenue options. However, where exemptions cannot be justified on economic grounds, then indirect tax should, in general, be made more uniform. For instance, although not strictly a tax reform, the Trajtenberg Committee has made welcome recommendations to reduce import tariffs on electrical goods and foodstuffs.

Turning to VAT, the tent protests have generated calls to widen exemptions (or introduce preferential rates) for some goods and services. Addressing social concerns in this way is expensive because all households benefit, including those on high incomes. Exemptions also run counter to the principle of uniformity that minimises distortions in consumer choice. Delineating between categories of goods and services can throw up awkward anomalies in VAT treatment and invites pressure from business interests. To date Israel's single-rate VAT system has had admirably few exemptions compared with other countries. Indeed, albeit relatively minor, existing VAT exemptions could be removed (exemptions currently apply to the tourist resort of Eilat, fruit and vegetables and certain tourist services). Thankfully, further exemptions do not feature in the recommendations of the Trajtenberg Committee, and the government should continue to oppose any proposals for further base narrowing through additional exemptions or the introduction of multiple rates.

Contrary to what many may believe, in several respects an increase in the VAT rate is potentially the least economically damaging way of ensuring revenues adequately meet deficit and spending goals in the wake of the Trajtenberg Committee recommendations. At

16%, the rate of VAT is considerably lower than that in quite a number of OECD countries (Figure 7). While higher rates are often accompanied by wide exemptions in OECD countries, there is room for some adjustment in the Israeli rate. In a welcome move the government approved the Trajtenberg Committee proposal to not reduce VAT from 16% to 15.5% as was previously scheduled (the rate of VAT was increased by 1 percentage point during the 2008-09 financial crisis as a temporary measure. It has since been reduced to 16% and was due to fall to 15.5% in January 2013). A modest increase in addition to this should be considered as a means achieving fiscal goals. True, VAT increases are regressive (although less so than often thought when looked at in a life-cycle context) and therefore should be combined with offsetting measures. For example, a VAT increase could be combined with increased transfers to low-income households (for example, by a hike in the earned-income tax credit; see below).

An innovative shift to a two-year budget cycle

The Ministry of Finance has used a "full" two-year (biennial) budget process since 2009, *i.e.* the legislative discussion and the budget are on a two-year basis. This is an extremely unusual approach. Indeed, it has hitherto been used regularly only in some US states and mostly in a "rolling" format (*i.e.* the budget process is annual, but each budget spans two years). However, biennial budgeting by central government is certainly not without merit and may prove worth adopting on a permanent basis. Two-year budgets can potentially lead to less resource-intensive and better policymaking through savings in administrative overheads. In addition, a two-year budget lengthens the "hard" budget horizon and therefore more forcefully extends fiscal planning than do many medium-term budgeting mechanisms.

But there are downsides to biennial budgeting. It places a heavy demand on revenue and spending projections, and worthwhile reforms that require related budget measures may be delayed by the two-year cycle. There are political considerations too. The budget cycle is a key forum for debate on economic policy, and therefore some may oppose lowering the budget frequency on the grounds that it may compromise the democratic process. In Israel, the new two-year cycle arguably places more power in the hands of the Ministry of Finance, because it can make substantial reallocations of public spending within the two-year budget cycle (subject to the overall spending limit and approval of the Knesset Finance Committee). In sum, there are clearly important uncertainties surrounding the impact of biennial budgeting on fiscal planning and economic reform, and the authorities should closely monitor its impact. Furthermore, the biennial approach is not a full substitute for improving more typical medium-term budgeting mechanisms, as these are anyway desirable as a means of extending the planning horizon beyond the budget cycle.

And a significant improvement in the fiscal treatment of hydrocarbon resources

Natural gas production from offshore fields began in the early 2000s and is set to increase substantially in the coming years following the discovery of new deposits, notably the Leviathan field in 2010. In total, these finds sum to around 700 billion cubic metres of natural gas, which amounts to resource wealth of about USD 15 000 per capita at current prices. While the discoveries to date are not on the same scale as those in very hydrocarbon-rich countries, there is a reasonable chance that more gas will be found, and possibly oil too. The resources imply additional fiscal revenues, not only from regular corporate taxation, but also from royalties.

In a welcome move, the authorities have brought the previously generous fiscal treatment of oil and gas resources much closer to levels typical elsewhere. Previously, the "government take" from natural gas fields was about 30 to 40%, depending on the size of field. It now ranges from 50 to 60%. The increase derives from a special profits levy that is triggered when the ratio of revenues to outlays reaches a certain level (the "R-ratio"). The initial proposal already included provisions lightening the burden for existing and upcoming developments, and further minor concessions were made before the legislation was finalised. However, these are not considered to have overly compromised the design of the new system.

The legislation requires the government to come forth with a proposal to channel fiscal revenues from the natural gas fields into an independently managed sovereign wealth fund (SWF), and this is indeed probably the best option. Such revenues should accrue widely to both current and future generations, because they represent the proceeds from the sale of a publicly owned asset. Allowing the proceeds to flow into general government revenues (or an earmarked fund for specific areas of spending) should be avoided because it would put excessive focus on the well-being of current generations. An SWF invested entirely in foreign assets would mitigate so-called Dutch disease, which would negatively affect competitiveness and employment. Given the reasonable chance of further finds, an SWF would insulate the deficit from fiscal leakage, so long as the share of the fund made available for spending is kept low. A drawdown of something like 4 or 5% – in line with real returns – would probably be best. The administrative framework for a fund should be established as soon as possible, before political commitments to use the revenues on current spending items take hold.

In general, pressures to subsidise downstream investment in gas export facilities or infrastructure for additional domestic demand should be resisted. Under a business-as-usual scenario, it is reckoned that domestic demand can absorb up to 10 billion cubic metres of gas per year, but production prospects are far in excess of this, and, as yet, there is no infrastructure for export. A degree of government involvement in the development of

Box 2. **Core recommendations on fiscal policy**

- Continue placing top priority on achieving the deficit targets and set spending increases according to the new rule.
- Avoid further rate increases in personal-income and corporate tax over and above those recommended by the Trajtenberg Committee. Exploit opportunities for double-dividend reforms in direct and indirect taxation (*e.g.* pruning exemptions, increasing environmental taxation).
- Do not narrow the VAT base in an attempt to resolve redistributive issues through exemptions; instead, aim for more uniform indirect tax overall and tackle redistribution through other channels. Indeed, use increases in VAT as a means of meeting deficit and spending goals.
- Closely monitor the impact of two-year budgeting while also strengthening regular medium-term budgeting mechanisms.
- Establish an independently managed sovereign wealth fund for holding fiscal revenues from hydrocarbon resources, invest it in foreign assets and keep the drawdown rate from the fund low (Chapter 3).

domestic demand and export is unavoidable because of energy security issues and the fact that electricity supply remains dominated by a single state-owned enterprise. However, involvement beyond these legitimate concerns should be avoided; there is little or no economic justification for state financial support or intervention in developing domestic demand or indeed influencing whether and how the gas is exported, which should remain a market-based decision.

Education, labour and social policies

Israel's profound challenges in education, labour and social policies were the subject of in-depth analysis in the previous *Survey*. Increasing rates of relative poverty in the Arab-Israeli and Ultra-orthodox communities remains a core issue with low earnings capacity, weak labour-force attachment and problems in the education system all playing a role (Figure 8). These problems are likely to increase in importance over time as the share of the population of the two communities is expected to rise due to their high fertility rates. Still, even though these groups already total around 30% of the population, some 40% of those in poverty are in other segments of the population. Therefore, while programmes targeting specific communities are justified, general policies with wide eligibility should do much of the heavy lifting in improving outcomes.

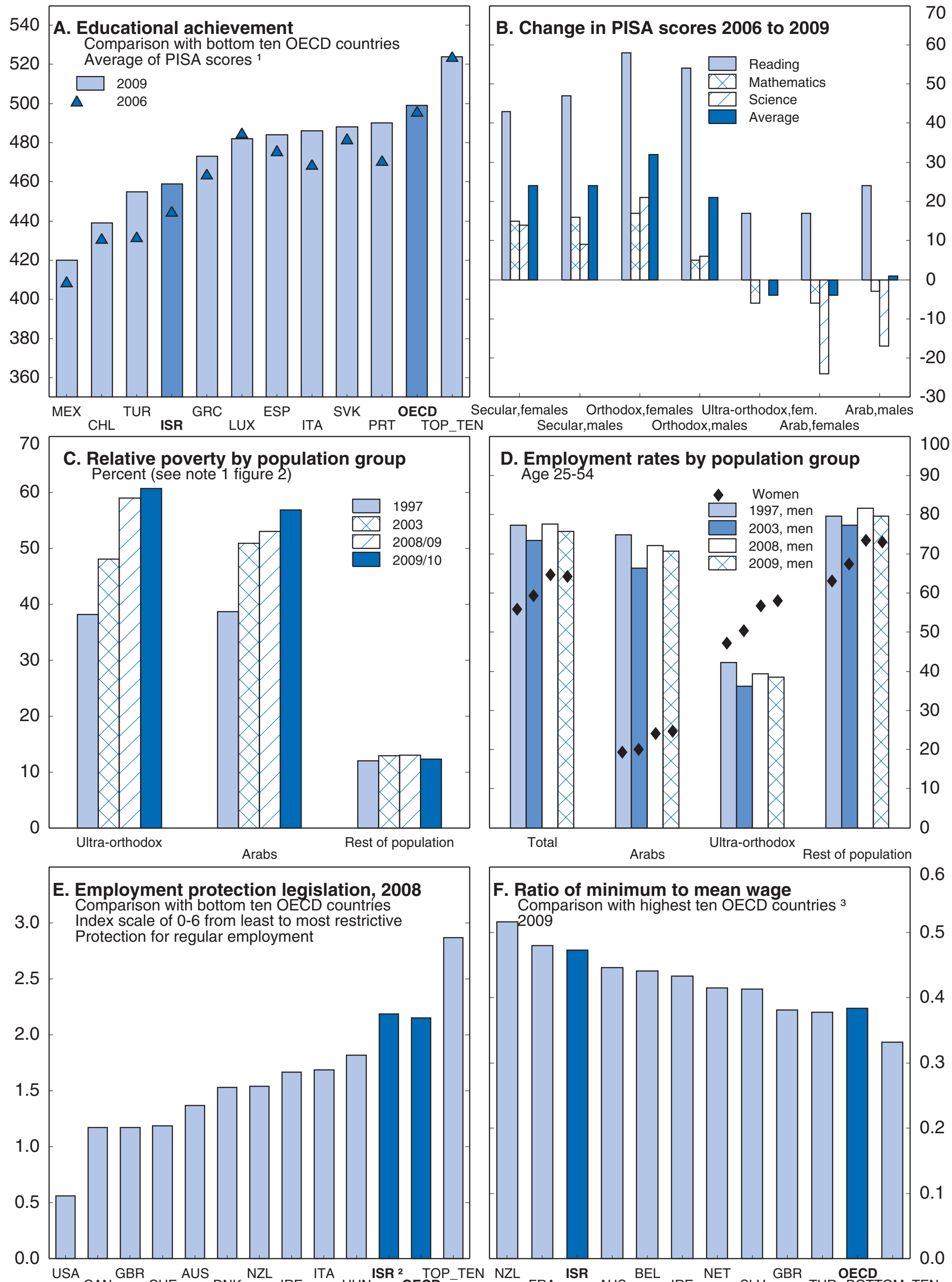
Some good news in the latest PISA results and reasonable progress in education reform

As discussed in the previous *Survey*, average educational attainment in the working-age population is fairly high in international comparison, but the results of PISA and other international tests point to weak core skills at secondary level. The latest PISA tests (conducted in 2009 and published in 2010) saw improvement in Israel's aggregate score, largely driven by better performance in the reading component. Somewhat worryingly, however, science and maths scores among Arab students actually fell compared with the previous results (Figure 8), as did maths scores for Ultra-orthodox girls (they did not participate in the science tests, and, as in previous PISA tests, an insufficient number of Ultra-orthodox boys participated in all the PISA tests to generate statistically reliable results).

There has been welcome progress in reforming compulsory education. Most notably, the upper-secondary teaching union has struck a deal with the government, similar to that agreed previously in lower-secondary education, involving substantial pay increases alongside additional teaching hours and other reforms (see Annex A1). However, much remains to be done, particularly as regards Arab-Israeli and Ultra-orthodox education. Arab-Israeli classes remain comparatively large, although efforts are underway to rectify this. The Ultra-orthodox community should be more forcefully encouraged to strengthen the vocational skills of its youth, in part by stronger curriculum requirements for the receipt of state funding.

Proposals to reform tertiary education are being revived since a failed push for the changes recommended by the Shochat Committee in 2008. This latest initiative comprises a substantial six-year plan whose main goals are to increase staff recruitment, raise the population of Arab and Ultra-orthodox students, boost spending on competitive research funds, upgrade teaching and research infrastructure and reform budgeting, such that it links inputs more closely to outputs.

Figure 8. **Education and labour-market indicators**



1. Reading, mathematics and science.
2. Israel has the sixteenth rank.
3. Data for only 22 countries are available. OECD calculations for Israel.

Source: Bank of Israel (2011), *Annual Report 2010*; OECD (2011), *Economic Policy Reforms 2011: Going for Growth*; OECD.Stat.

StatLink http://dx.doi.org/10.1787/888932539194

A lack of progress in making employment and social policies more effective

Progress towards a more effective employment-oriented social policy has been disappointing. A promising pilot scheme of private placement services (dubbed the Wisconsin programme) came to an end in spring 2010. The authorities should nevertheless revive the approach, drawing on lessons from the pilot scheme, particularly as regards competition among providers. Yet, in a welcome move, the earned-income tax credit has been expanded to cover the whole of the country. Furthermore, the Trajtenberg Committee has recommended a 50% increase in the credit for working mothers (along with substantial expansion of daycare support and early-childhood education), which is a step in the right direction. On other fronts, little progress has been made along the lines recommended by the previous *Survey* and other OECD work (see Annex A1). In particular, general income support remains meagre, and there have been no initiatives to economise on universal child allowances. In spring 2011 trade-union pressure led to exceptional increases in the minimum wage, thus pushing ratio of the minimum to the average wage even higher (Figure 8). At the same time, labour law and minimum employment conditions remain inadequately enforced, which particularly affects vulnerable low-income workers. Greater infrastructure investment in Arab localities (such as that provided in five-year development plan for the minority sector) is welcome, but has to be "joined up" with broader education, employment, social and business policies.

In housing, tax settings excessively favour home ownership…

In-depth review for this *Survey* finds that policies in Israel generally favour home ownership, and around 70% of households are owner occupiers. Such high rates of home ownership can limit labour mobility, since renters are more willing to relocate in response to changing job-market opportunities – although Israel's relatively high population density means this issue is less significant than in some other OECD countries. In addition, the incentives for owner occupation typically distort consumption and saving behaviour, and represent a "back-door" tax benefit for middle- and upper-income earners. Thus, in broad terms, policy should aim for more balanced incentives to own or rent property.

Home ownership is partly encouraged through the various taxes and other policy settings that affect the purchase, ownership and sale of property, even if mortgage regulation has long encouraged low loan-to-value ratios. The treatment of capital gains from the sale of property is unusually generous. As in many countries, there is exemption from regular capital gains tax on primary residences but also, to some extent, on property owned by private households for investment purposes (although this has recently been pared back). At a minimum these exemptions should be reduced to cover only primary residences. However, in other respects the tax treatment of housing is in good shape: transactions taxes and charges (which are highly distorting) are light; the tax treatment for homeowners follows a reasonable compromise (implicit rental income is not taxed, but mortgage interest deductibility is not allowed); and property taxation is more fully exploited than in many other OECD countries. Indeed, the latter should be pursued further.

… and housing support schemes extend well beyond assistance to low-income households

Home ownership is also promoted through grants and mortgage assistance, typically for specific population groups and not always confined to low-income households. This is symptomatic of housing support as a whole and reflects an attempt to combine social-welfare goals with other policy objectives. Most notably, a large share of spending on housing support goes to those who have recently settled in Israel, as part of a broad programme for encouraging and integrating immigrants. Furthermore, most schemes are in one way or another more generous for households in peripheral areas (typically based on the system of National Priority Areas, NPAs), and special consideration is often given to those who have completed military service.

The diverse policy agenda means that significant support is provided to households that are not necessarily indigent. True, the housing policy does provide support for low-income households through means-tested public housing and rental subsidies. But, in addition for instance, all recent immigrants receive rent support for five years, irrespective of income, seemingly an inefficient use of public funds. Also, access to the general scheme for mortgage support is governed by a somewhat unusual points system (which, for example, includes points for the number of siblings of the applicants) that does not directly take into account household income and strongly favours large families. Furthermore, highly targeted schemes continue to feature on the policy agenda. In 2011 a new programme, initiated by politicians representing certain communities, has been providing mortgage support to 28 designated towns. Its effectiveness should be closely monitored, particularly as to the risk that support is captured by property developers through price hikes.

Unlike many other OECD countries, Israel has no special legislation regarding rental contracts, and this may well be discouraging the development of the rental market. There is no specific legal framework defining the rights and responsibilities of landlords and tenants. For instance, there is no legislation governing deposits, notice periods, contract renewals. All such details are left to be entirely determined by whatever contract is signed between landlord and tenant. The introduction of some modest minimum legal criteria should be considered, so as to set some boundaries on acceptable outcomes.

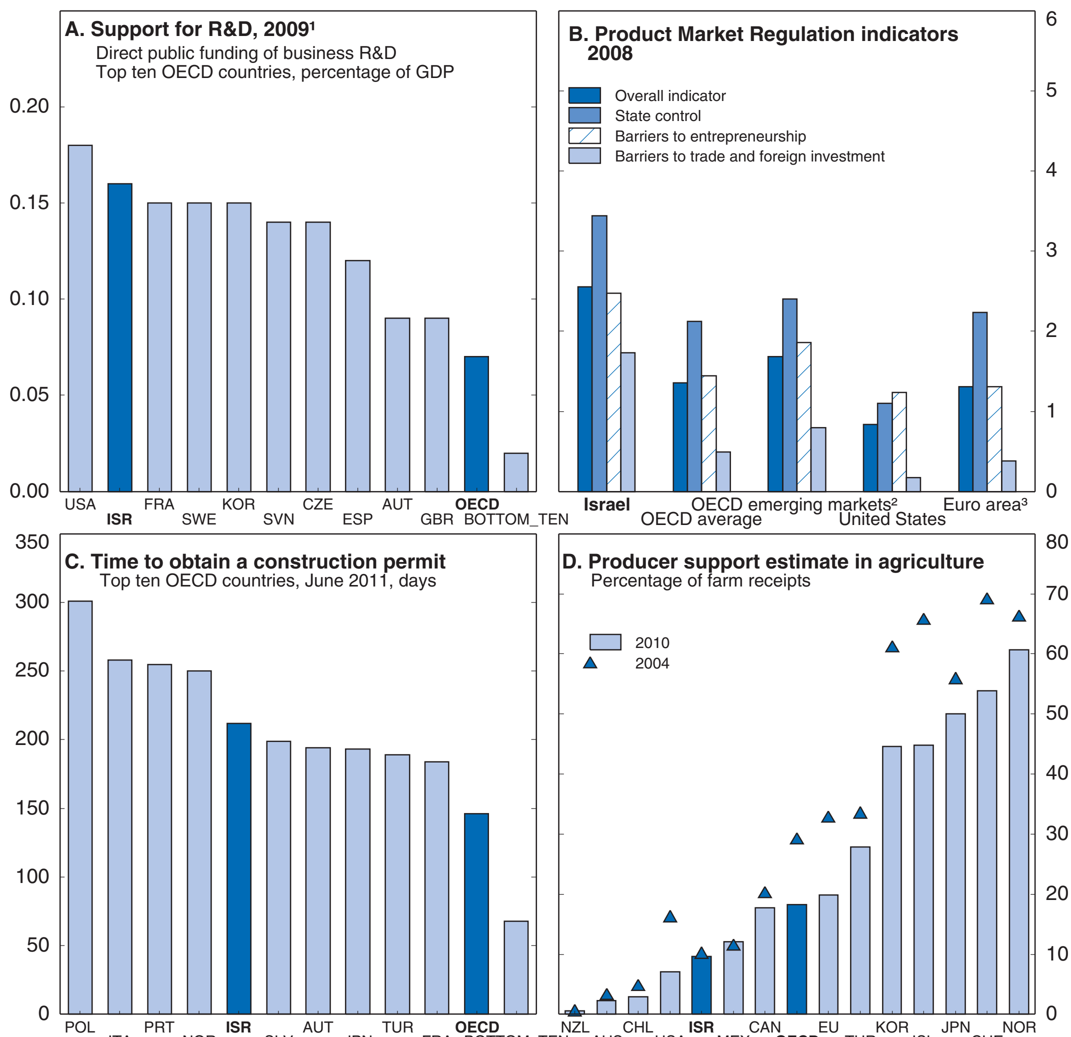
Box 3. **Core recommendations on education, labour and social policies**

- Press on with general reforms to state primary and secondary education and targeted policies, particularly those to improve education for Arab-Israelis. More forcefully encourage the Ultra-orthodox community to strengthen vocational skills as part of a wider strategy to increase labour-market participation and income from earnings.
- Make work pay. Re-introduce a welfare-to-work programme along the lines of the cancelled “Wisconsin” programme, and increase the value of the earned-income tax credit. Consider increases in general welfare benefit. Combine strengthened enforcement of the minimum wage and labour regulation in general with gradual erosion of the value of the minimum wage in relation to the average wage.
- As regards socio-economic issues relating to housing: (Chapter 1):
  - Pare back tax exemptions for homeowners and property investors.
  - Focus housing support more strongly on low-income households.
  - Introduce legislation that details the rights and responsibilities of landlords and tenants with a view to providing more certainty and continuity in rental contracts.

Progress in improving the business environment

In broad terms Israeli economic policies have long been geared to improving the environment for business. The establishment of low, single-digit inflation and reductions in the overall "size" of government have been crucial. Also, targeted support programmes (such as that for greenfield investment and small and medium-sized enterprises) is strongly tilted towards the high-tech sector and research activity (Figure 9), and this has undoubtedly contributed to Israel's widely recognised strengths in these fields. Nevertheless, as underscored in the previous *Survey*, strong frameworks for assessing, modifying and, where necessary, pruning programmes are important. Reducing the red tape facing businesses is

Figure 9. **Indicators of business policy**



1. Or latest available year.
2. Czech Republic, Hungary, Korea, Mexico, Poland, Slovak Republic, Turkey.
3. Austria, Belgium, Finland, France, Germany, Greece, Ireland, Italy, Luxembourg, Netherlands, Portugal, Spain.

Source: World Bank (2012), *Doing business, Dealing with Construction Permits Database*; OECD (2011), *OECD Science, Technology and Industry Scoreboard 2011*. OECD.stat, *PMR Database*; OECD.stat, *Producer and Consumer Support Estimates Database*.

StatLink http://dx.doi.org/10.1787/888932539213

necessary too. A one-stop-shop system for business permits and other administration is being established, though the latest World Bank indicator suggests the fruits of this reform have yet to emerge (Figure 9).

In a similar vein, the examination of housing policies for this *Survey* reveals that planning approval for housing construction is extremely slow. As regards competition issues, past OECD reviews have found little technical fault with general competition legislation and oversight but have in particular identified unfinished business in network industry reform and broad concerns about the competition effects of Israel's business groups. Moreover, the recent social protests focused on the impact of weak competition in a number of sectors on the general price level.

In the housing sector reforms to planning regulation are underway

Israel's relatively high population density limits somewhat the capacity for a rapid supply response in housing and property development; dense populations require fairly extensive planning regulations and procedures due to the prevalence of complex urban environments. However, it is widely accepted that there is scope for a more nimble planning system in Israel. As one of several measures to cool the housing market, the authorities have already sped up the approval of new housing projects within the current system. Housing starts have been increasing since early 2010, and in 2011 there will have been some 44 000 starts per year. This figure compares with only 30 000 to 35 000 starts per year between 2001 and 2009 and exceeds the annual increase in the number of households of around 39 000. In addition, property developments representing some 51 000 new dwellings have been identified in a first list of candidates for a proposed temporary "fast-track" approval process.

There has also been progress in permanent reform to planning and land-ownership systems. Since most land is owned by state or quasi-state bodies, the authorities naturally have strong powers in deciding the location and type of new property development. Indeed, most homeowners in Israel are technically in fact leaseholders. Following the 2009 Land Reform Bill, leaseholders in selected areas are being given the opportunity to switch to full ownership of their property, which is broadly welcome and should be pursued further. This will provide an important building block in reducing the role of central government in the housing market.

The Land Reform Bill also paved the way for significant changes in planning administration. The current agency, the Israeli Lands Authority (ILA), was slated to be replaced by a new body operating within a faster and simpler planning system. The reforms notably envisage decentralisation of responsibilities to municipalities and property developers. However, implementation has been slow. Furthermore, concerns have been raised that the proposals do not adequately ensure checks and balances in municipal-level planning. Clearly, if there are such difficulties, they need to be addressed in the reform.

In the energy sector, sluggish reform in electricity and concerns about competition in natural gas

Analysis of the energy sector in this review underscores Israel's slow progress in reforming the electricity supply chain. An independent regulator (the Public Utilities Authority – Electricity) was established in 1996, and some private-sector generation is due to come on stream shortly. But even when this is up and running, the state-owned incumbent (the Israel Electricity Corporation, IEC) will continue to produce the lion's share of electricity and remain the sole provider at all other stages of the supply chain. The reform process is in stalemate, with permanent friction between the authorities, management and unions. Furthermore, IEC's financial position is precarious. Policy commitment giving greater certainty about the process and timing of a shift towards a market-based model is required. In addition, the reform programme needs to resolve the IEC's financial difficulties as well as generating capacity problems.

Although the gas sector has been set up along market-based lines, there are concerns about the level of competition. The exploration and development of offshore natural gas is being largely conducted by a single consortium, and the industry has come under the scrutiny of the competition authority. Furthermore, the imports of natural gas from Egypt have provided a useful counterweight to the offshore fields, but in light of recent disruptions this may diminish. Multiple sources of supply are especially important for energy-security reasons. There is also a concern about the institutional framework of the sector. Although the supervisory body (the Gas Authority) has many features of an independent regulator, it operates in the same premises as the Ministry of National Infrastructures and is legally defined as being "in" the Ministry. A clearer separation of the Authority from the Ministry should be sought to ensure regulatory decisions and policymaking are independent for clearer accountability.

Competition issues in the financial sector remain a subject of debate

Issues in competition are not confined to network industries, and this *Survey* highlights particular concerns relating to the financial sector (Chapter 2). The degree of competition in retail banking has long attracted attention, with service fees being a common target of complaint by the public at large. Direct regulation of fee levels has been avoided as a response, which is welcome. Instead, transparency has been increased by rationalising and harmonising the definition of fees and by ramping up disclosure requirements. Similar reforms to fees in institutional savings vehicles have been proposed, which would be welcome too.

Furthermore, the structure, conduct and performance of Israel's financial entities are inexorably linked to a broad debate about corporate governance, because most of the major financial institutions are controlled by large domestically owned business groups. Debate about the relative benefits of these groups has intensified recently, with two issues pertaining to the financial sector. First, the presence of financial institutions in company groups typically amplifies their advantages and disadvantages. In-group financial institutions facilitate efficient financial intermediation but can also provide more opportunities for appropriation and self-dealing by controlling shareholders. Second, there are issues of prudence and systemic risk: the stability of financial entities may depend on the stability of their parent company groups, which may in themselves pose systemic risks. With a number of such institutions that are "too big to fail", there is a public interest in preventing them from giving preferential treatment to related non-financial entities.

Similar to most other countries, attempts to limit the downsides of company groups have to date operated primarily through regular corporate law and antitrust regulation. This has been boosted recently by new legislation (the Concentration Law) that gives the antitrust authority stronger powers to operate in markets with relatively high levels of concentration. In addition, a high-level committee was set up by the Prime Minister to examine avenues for improving corporate governance in the business groups, released its preliminary recommendations in September 2011. These entail some deep and innovative reforms to corporate governance rules and will in principle significantly reduce the scope for inappropriate corporate behaviour. The proposal to force separation of ownership between financial and non-financial entities in particular should be implemented. Analysis in Chapter 2 suggests that, in addition to these reforms, the authorities should establish a permanent body charged with monitoring role of the business groups with regard to market competition. The latter could be combined with the establishment of a specialised unit within one of the existing supervisory agencies for assessing the groups in relation to their effects on financial stability. Chapter 2 also underscores the importance of promoting a greater foreign presence in the financial sector (and in company groups), as a means of diversifying ownership.

Public debate about price levels and the strength of competition in supply chains for household goods has intensified. Recent protest was sparked by outrage over the price of cottage cheese, but attention has widened to other sectors, and the issue has been a central theme of the tent protesters. Given the size of the Israeli economy, there are often points in supply chains where economies of scale mean there can be only a limited number of domestic operators. While this indeed potentially generates monopoly profits (and high prices), some policies and regulations are also causing problems. Food prices are affected by a host of restrictions, and tariffs on imports as part of efforts to protect domestic agricultural production (OECD, 2010c). As well, until recently, vehicles could be bought only from domestic dealerships that generally have exclusive rights to the sale of each car brand. Hence, it appears that much work could be done to expose domestic supply chains to stronger foreign competition. Progress on this front could also obviate the need for some of the price regulation currently in place that aims to counter excessive supply-chain profits.

Box 4. **Core recommendations on the business environment**

- In broad terms, pursue general efforts to reduce red-tape facing business, closely monitor targeted business support (with a view to pruning), and pay greater attention to competition in network industries and the wider economy.
- Proceed with efforts to encourage the supply of housing, but nevertheless act with some caution in streamlining and decentralising planning regulation (Chapter 1).
- Strengthen policy commitment to reforming the poorly performing electricity sector and the IEC in particular (Chapter 3).
- Implement the proposals of the Concentration Committee, particularly the recommendation forcing business groups to divest themselves of controlling shareholdings in financial institutions. Promote greater foreign presence in the financial sector (Chapter 2).

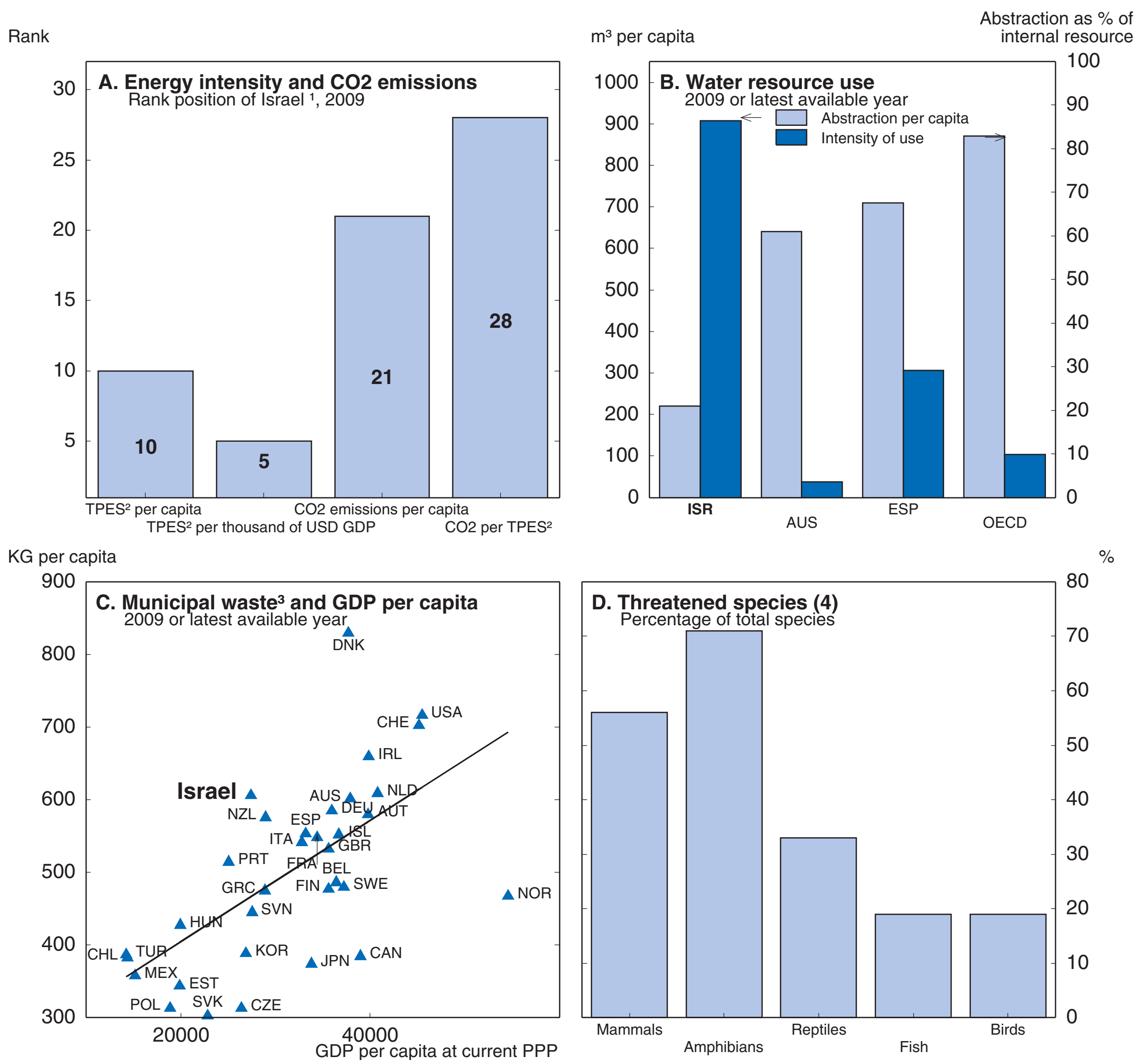
Environmental issues

Many of Israel's environmental challenges are strongly connected with its rapid growth in population and economic activity. Environmental issues arising from the production and use of energy are prominent (and are discussed in Chapter 3 of this *Survey*). Water and waste management are high on the agenda too, with Israel's dry climate adding to the challenges. In addition, Israel's geographic position means it has a high level of biodiversity and is an important route for many migratory species.

Plans for GHG-emission reduction focus on the electricity sector

Israel's greenhouse-gas emissions and related air pollutants are largely the result of electricity production and energy use in transportation. Electricity supply is entirely domestic and generated almost entirely by hydrocarbon fuels. As a result, although energy intensity is relatively low, emissions per capita or per unit of GDP are relatively high (Figure 10). Supplies of natural gas via pipeline from Egypt and increasingly from the offshore fields are allowing a shift away from oil- and coal-based generation, but concerns for supply flexibility and security mean there is a limit to further substitution. Indeed, repeated disruptions to Egyptian supplies in 2011 have served as a reminder of Israel's vulnerability on this front. The picture in renewable energy is mixed. Regulations

Figure 10. **Environmental indicators**



1. Out of 32 OECD countries. Low rank indicates lower energy intensity or emissions.
2. Total primary energy supply.
3. Household waste only for Australia and Canada.
4. International Union for Conservation of Nature (IUCN) categories "critically endangered", "endangered", or "vulnerable" species in per cent of known species.

Source: OECD.stat, *Energy Database* and OECD (2011), *Environmental Performance Review of Israel*, Paris.

StatLink http://dx.doi.org/10.1787/888932539232

introduced in the 1980s have meant the vast majority of domestic water heating has long been via solar panels, a renewable source of energy. However, only about 1% of electricity is currently generated from renewable sources.

Environmental policy reform has gathered momentum in recent years. An explicit target representing a 20% (22 Mt CO_2-eq) reduction from a baseline GHG-emissions calculation by 2020 has been developed through a practical "bottom-up" approach based on feasible emissions-reduction measures. Because population growth and economic development are expected to drive a fairly steep baseline, GHG emissions are nevertheless estimated to rise by 16.5% by 2020, even if the target is reached. The plan is for most of the emissions reduction to come from the electricity sector, and subsidiary goals in energy efficiency and renewable energy production have been set. Though the target-setting exercise represents an admirable step forward, it should be followed up with monitoring and a system of dynamic targeting that looks beyond 2020. There should also be a commitment to an independent technical assessment of progress toward the target.

Significant emissions reductions are expected from an energy-efficiency programme. A large number of measures have been laid out in strategy documents, some of which have been approved by the government, including subsidies for scrapping household refrigerators and air conditioners. Though the programme is already commendably comprehensive, there is room for other measures, particularly as regards buildings. Mandatory green building standards could be introduced alongside the current voluntary system, and compulsory energy-efficiency certification should be considered.

Plans are also being implemented that aim to raise the contribution of renewable electricity generation to 10% of aggregate supply, principally though thermo-solar, photovoltaic and wind power. While a significant number of tenders for production and quotas for feed-in tariffs have been allocated, further regulatory hurdles remain before production can begin, most notably planning regulations. The authorities should work to overcome any such obstacles to renewables development as they arise. As with renewable-energy schemes in many countries, the feed-in tariffs are likely to pass through to end-user prices, but the levels of the tariffs is difficult to justify on the basis of a simple calculation of the implied price of carbon. Thus, as elsewhere, policymakers are implicitly appealing to other arguments, such as supporting demand so as to spur further technological advance.

At present the emissions-reduction plans do not include economy-wide instruments, but these should be included in further developing plans. Although perhaps a distant prospect, greater participation in international trading should remain a strategic goal so as to ensure that the costs of emissions reduction are minimised. Also, a "carbon tax" based on existing excise duties imposed on primary fuels (oil, coal and natural gas) would be beneficial in order to equalise marginal costs of climate-change mitigation across sectors. This would be particularly effective, given the substantial share of GHG emissions derived from such fuels in Israel.

A need for better public transport and further development of vehicle taxation

Achieving GHG-emissions reduction and resolving urban congestion and other transport-related externalities importantly requires improved options for alternatives to private-vehicle use. To date public transport has largely comprised state-subsidised bus transport. Concrete progress in expanding the currently limited rail network has been slow. Following various long delays, a light rail network is now finally running in Jerusalem, and construction of another in Tel Aviv has recently begun after many years of delay. In 2011 a long-term plan for inter-city rail and road development was approved by the central government, and implementation should be given a high priority.

Taxes and charges influencing car use could also be improved. The introduction in 2009 of a scheme differentiating purchase taxes on cars according to environmental criteria is welcome. However, the basic rate of purchase tax (83%) distorts consumption behaviour and on this basis should be lowered further. For most environmental issues it anyway makes more sense to target car use more directly. In particular, in order to internalise the external costs of congestion and other localised externalities road pricing and other schemes targeting car use should be more fully exploited, for instance by expanding use of toll systems such as the one recently introduced on one lane of the main highway into Tel Aviv. The tax treatment of company cars should also be made less generous, and the inclusion of car allowances in employee remuneration in some sectors (notably the public sector) should be reconsidered.

Box 5. **Core recommendations on energy-related environmental policies**

- Follow up the one-off GHG-emissions-reduction targeting exercise with comprehensive monitoring, including revaluation of baseline emissions and the establishment of targets going beyond 2020.
- Work towards economy-wide instruments: envisage greater involvement in international emissions trading, and consider using existing duties imposed on primary fuels as a basis for a "carbon tax".
- Improve the options for alternatives to private-vehicle use.
- Align taxes and charges relating to vehicle use more with environmental externalities. Reduce taxes at the point of sale (notably the purchase tax), and raise those influencing use; scale back tax breaks for company cars; and discourage the inclusion of car allowances in pay packages.

Issues in water and waste management, and biodiversity

In 2011 the OECD undertook its first Environmental Performance Review of Israel (OECD, 2011) Israel has substantial expertise in water technologies, and this is likely to remain a source of "eco-innovation". Also, some dimensions of the economics of water management are in good shape. Practically all water consumption is metered (and is priced on a block-tariff system), the use of "smart metering" is growing, and full-cost recovery in water pricing overall has been achieved. As well, wastewater management is highly effective, as over 80% is re-used, since that is much cheaper than desalination. However, cross-subsidisation from households to the agricultural and industrial sectors should be reduced as planned and targets for domestic water consumption established. In addition, the use of economic instruments could be broadened. For instance, the pollution tax could be expanded to cover effluent discharges into fresh water and aquifers.

Municipal waste generation is among the highest in the OECD area on a per capita basis and is principally deposited in landfills. Recent policy initiatives notably include a landfill levy. However, the waste-collection component of the municipal property tax should be increased, as it does not fully reflect service costs, and volume- or weight-based waste disposal schemes should be gradually introduced. Recycling remains underdeveloped, and there is a need to roll out programmes for the separate collection of waste and related treatment infrastructure, including wider use of waste-to-energy solutions.

Israel has a high degree of biological diversity, largely due to its location at the interface of Africa, Asia and Europe. In this regard it is particularly significant as a migratory route for birds and marine species. More work is required to establish the extent and value of ecosystems and biodiversity and the pressures on them. Measureable biodiversity targets need to be established, conservation strengthened and steps taken to reduce the inflow of invasive alien species. Market-based instruments should be expanded, such as fees for ecosystem services in housing and infrastructure development. Also, opportunities for private-sector participation in biodiversity protection should be exploited (*e.g.* eco-tourism).

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ANNEX A1

Progress with structural reforms

This annex reviews the measures taken in response to the recommendations from previous *OECD Economic Surveys*. The recommendations that are new to the present *OECD Economic Surveys* are contained in the corresponding chapters.

Recommendations	Measures taken since 2009
Education (*2010 Survey*)	
Regular primary and secondary education (*i.e.* the supervised sector)	
● Fully implement the New Horizon (Ofek Hadash) programme in lower-secondary education.	● In the 2011-12 school year New Horizon will be fully implemented in primary education with further coverage in kindergartens and lower-secondary education schools.
● The stakeholders in upper-secondary education should be encouraged to strike a similar deal.	● An agreement for upper-secondary education was reached in August 2011. The "Courage to Change" Reform will raise pay by about 50%, on average, in exchange for an increase in working hours from 24 to 40 hours per week and a range of other pedagogical, professional and administrative reforms. Implementation began in the 2011-12 school year.
● As regards the other general reforms: ❖ Continue implementing the extension of compulsory education and the caps on class size as planned.	● In the 2011-12 school year compulsory education to Grades 11 and 12 will increase to apply to 35% of students. The budget to fund the cap in class size has been increased (in 2010-11 it was NIS 200 million).
❖ Continue with efforts to shift away from rote learning.	● A number of programmes aim, *inter alia* , at reducing rote learning.
❖ Alter budgeting so that the Strauss index (or something similar) allocates most, or all, of education budgets.	● The Strauss index continues to determine only a small share of education funding.
● Consider the following additional general reforms: ❖ Take further measures to reduce the dominance of teachers who teach as a lifetime career, along the lines of the recent "Academics for Teaching" programme and similar initiatives.	● The Academics for Teaching programme has proceeded as planned and four additional new teacher recruiting programmes were introduced in 2010-11.
❖ Introduce an individual a bonus for teachers linked to student performance, similar to that used in the one of the pilot projects in the early 2000s.	● Teacher bonuses – The "Courage to Change" reform anticipates bonuses for schools and outstanding teachers.
❖ Pursue further reform of the Bagrut system, in particular so that it provides better information on student capabilities for entrance to tertiary education.	● Several other initiatives have been launched including programmes to increase independence of schools (self management of schools) and provide a greater role for parental preferences. In addition steps have been taken to strengthen vocational training. Efforts are also being made to improve budget transparency.
● Make more strenuous efforts in affirmative action, particularly as regards Arab-Israeli students: ❖ Evaluate and, if necessary, reform the relevant targeted programmes.	● The five-year programme in the Arab-Israeli sector has this year become more targeted, focussing on three areas: Arabic language, mathematics and sciences.
❖ Ensure general reforms also work towards reducing inequalities in education.	● New targeted initiatives include: additional teaching hours in Grades 3 and 4 in Arabic, mathematics and science; reading test in Grade 1 to identify and assist weak students; Shalhevet Program – incorporating language comprehension and expression across subjects; upgrading the quality of teacher intake; and improved adaptation of the Arabic language curriculum to international tests.

Recommendations	Measures taken since 2009
❖ Adopt equity targets in key dimensions of inputs and outcomes in education.	● Many general programmes are being implemented in such a way as to reduce inequalities. For example, in the programme to cap class size, 67% of the programme budget for primary schools was allocated to the non-Jewish sector, which is much greater than the share of pupils (which is around 33%). The budget for this programme in lower secondary education has been similarly allocated.
Ultra-orthodox education	
● Encourage the community to strengthen vocational skills as part of wider efforts to increase employment rates, particularly among men:	
❖ Existing curriculum requirements on grants for teaching services in primary education need to be more stringently enforced. Similar conditions should be applied to secondary schools and other sources of state funding, such as infrastructure grants. Consider introducing core curricula for all schools, *i.e.* universal curricula requirements.	● Fourteen additional superintendants were appointed in 2011, with the aim of tightening supervision over Ultra-orthodox schools in relation to the teaching of core subjects. ● The Ministry has withheld funding based on the percentage of core curriculum taught.
❖ In areas where schools choose not to accept the conditions for state funding consider subsidising optional out-of-school private-sector education and training.	● Efforts have been made to increase opportunities for Ultra-orthodox boys in the field of vocational education.
Tertiary education	
● Pursue the Shochat reforms. Indeed, go further on some fronts: give providers greater leeway in setting fees, while ensuring access through student loans and grants. Make staff pay and progression more transparent and flexible.	● A six-year reform plan has been developed that notably reforms the system of state transfers to tertiary education providers. However, the reform does not propose reform of student fees.
Lifelong learning	
● As regards special education support for conscripts, ensure that the equivalent post-school support is also available for Arab-Israeli students.	● No significant reform.
Labour-market, social and welfare policy (*2010 Survey*)	
Tax breaks and benefit payouts	
● Make more use of the EITC: expand coverage to the whole of the country, and consider increases in the credit rate and greater differentiation according to the number of children.	● The EITC is now available nationwide; the size of the credit has not been increased for working mothers.
● Increase payout in Income Support, and bring in new levels of benefit for those with more than two children. Refrain from further increases in universal child allowances beyond those already scheduled. Indeed, consider making economies, for instance through wider application of the lower rates that currently apply only to children born after May 2003.	● No significant reform of Income Support payouts. Child allowance increases are being increased as described in 2010 Survey (p. 110).
● Reform other tax credits. For instance, consider reducing the regular (*i.e.* wasteable) tax credits, (especially if combined with an increase in EITC). However, on the grounds of equal treatment, the same credit should be applied to men and women. The extra credits for children should be made claimable by either fathers or mothers and not just the latter.	● No significant reform on other tax credits.
	Other
	● The ceiling for National Insurance Contributions was temporarily raised from five times to ten times the average wage.
Entitlement conditions and employment services	
● Ease the prohibition on car ownership and access to a car in the means test for Income Support and related benefits and conduct a general investigation of eligibility with a view to widening coverage.	● No significant widening of eligibility. Among various minor adjustments, the definition of a child for benefit purposes has been increased from 22 to 24 years for those who have not yet completed army service. This may be of particular significance to Ultra-orthodox and Arab families.
● Nationwide adoption of the Light for Employment programme should proceed, but it is important to define the future role of the Employment Service before doing so.	● Light for Employment programme was cancelled in spring 2010. A replacement plan has been mooted, but no concrete proposal has been made as yet.
● The moves to lighten employment rules for disability-benefit recipients should be followed by removal of rules allowing labour-market conditions to have a bearing on eligibility and a general review of the eligibility procedure. Also, a shift in the approach of medical assessment from general disability to capacity for work should be considered.	● No significant reform of disability benefit.

Recommendations	Measures taken since 2009
Childcare services	
● Support for childcare services is moving in the right direction; daycare services for Arab-Israeli children warrant particular attention.	● No significant reform.
Labour regulation	
● Efforts to increase the enforcement of labour regulation should be intensified but combined with lowering the value of the minimum wage relative to average earnings.	● Exceptional increases in the minimum wage were agreed in early 2011. It was raised from NIS 3 850 to NIS 3 950 in April and will be increased to NIS 4 300 in October 2012.
● In sectors dominated by foreign workers increased enforcement of labour regulation should be accompanied by measures to limit rent-seeking in the permit system.	● Enforcement has been ramped to counter rent-seeking in work permits. Reductions in quota numbers for temporary worker are planned but as in the past may only be partially implemented.
Pensions	
● For first-pillar pensions, as with regular Income Support, eligibility rules to the Income Supplement should be reviewed with a view to widening coverage.	● No significant reform.
● Increases in women's retirement age for eligibility for state pensions should be extended beyond 2017 so as to eventually equalise with that of men.	● A bill is passing through parliament that rejects increasing women's pension age beyond 62 years.
● Tax breaks on pensions should be pruned. The credits on long-term saving should apply only to savings that are over and above mandatory levels and credits in pension payouts reduced. Credits might also be made "non-wasteable" to boost their value to those on low incomes.	● Reforms to the tax treatment of pensions are under discussion along with measures to encourage life-cycle adjustment of the risk profile of pensions savings.
	Other measures
	● Agreement has been reached for further increase in mandatory second-pillar contributions. Increases were supposed end in 2013 (at 15%) but will be increased to 17.5% in 2014.
	● Proposals for life-cycle portfolio adjustment in second-pillar pensions are under discussion.
Policy towards business (*2010 Survey*)	
Business support	
● In general, ensure there are good processes for pruning, modifying and innovating within the various menus of support measures.	● Core legislation governing business support (the Law for the Encouragement of Capital Investment) has been revised, and includes some simplification of processes.
● Given regional-policy objectives, re-balance investment incentives to better cater for the skill base of the peripheral regions that are targeted by these programmes.	● Business support for innovation has been ramped up on several fronts, including: doubling of the budget of the Israel Science Foundation; establishment of a programme for developing alternative fuels; and guarantees to institutional funds investing in venture capital (August 2010).
● Consider paring back targeted support for business in exchange for significant reductions in the rate of corporate taxation.	
● Reduce support for agriculture and make it less distorting, for instance through further reduction of trade barriers on agricultural products and further simplification of the current highly complex tariff profile, as well as through cuts in support payments based on input use.	
Competition policy and network industry regulation	
● As regards the Israel Antitrust Authority, consider authorising civil penalties, increasing the budget to deal with staff-retention problems and making the IAA's advocacy and regulatory roles more explicit.	● The subsidy agreement for Israel Railways has been revised.
● In the electricity sector, continue to press for a solution in the deadlock on reform of the Israeli Electricity Corporation.	● Steps aimed at strengthening competition in the telecoms sector include: regulation to force reduction in the cost of international cell-phone calls, reduction of interconnection tariffs, a tender for a new cellular operator issued.
● In telecommunications, follow through on plans to introduce an independent regulator, and continue to push for market opening, notably through unbundling of the local loop.	● Reform of port tariffs approved, including phasing out of cross-subsidy between exports and imports.
● Press on with efforts to privatise and introduce or strengthen competition for services in post, sea ports and water.	● Provisions have been adopted that allow the direct import of cars from foreign dealers and the export of used cars to Arab countries.
● Explore whether there is any justification for the state's "golden" shares having unusually strong rights, as is suggested by the OECD's product-market regulation data.	● Concentration Groups Law approved that gives the antitrust commissioner powers to declare a "concentration group" and to operate against it.
● Give continued policy attention to underdeveloped road infrastructure and rail service. Consider establishing a national transport authority and giving local authorities a bigger role in planning, financing and operating public transport systems and road networks.	● Long-term plan for rail and road development agreed ("Netivei Israel" programme).

Chapter 1

How to improve the economic policy framework for the housing market

Israeli house prices have risen by over 50% over the past three years. In part this reflects the fact that for several years housing construction had not kept pace with increases in the number of households. In response to these developments, hitherto sluggish planning-approval processes are being speeded up. However, in addition low interest rates have been boosting demand, and there are concerns that prices have already been driven to bubble levels. Efforts have been made to subdue demand, and the market has cooled off somewhat, but there remains a risk of a hard landing with a sharp downward price correction and a contraction in construction activity. Recent price developments are not the only economic issue in Israeli housing. As in a number of other OECD countries, housing policies favour home ownership through tax settings and subsidies for house purchase, potentially raising issues of labour mobility. More generally, housing support (public housing and rent support as well as subsidies for purchase) endeavours to fulfil an unusually wide policy agenda that goes beyond simply assisting low-income households with their housing needs.

Rapid house-price increases since 2008 have prompted efforts to cool down the housing market to avoid the formation of a bubble. This chapter traces the background to these developments and examines other policy issues in Israel's housing market. These include: regulations that guide the location and tenure of newly constructed dwellings; regulatory and tax influences on the process of buying, owning and selling dwellings; and targeted programmes assisting housing rental or purchase for some segments of the population. Policy recommendations are summarised at the end of the chapter.

Some topics in Israeli housing are closely linked to geopolitical issues that are beyond the scope of OECD analysis. As noted in the previous *Survey* (Box 1.3), OECD *Surveys* are not intended to cover the territories known as the Golan Heights, the Gaza Strip or the West Bank including East Jerusalem. In terms of statistical coverage, however, for technical reasons this chapter almost exclusively uses data that are regularly published and updated by the Central Bureau of Statistics (CBS) or other Israeli authorities, which include data relating to East Jerusalem, Israeli settlements in the West Bank and the Golan Heights. A sizeable number of Israelis live in these areas. According to figures calculated by the Israeli authorities for the OECD (OECD, 2011a), the total population of these areas, as of 2009, was 774 thousand, 444 thousand of which live in East Jerusalem, 289 thousand in other areas of the West Bank and 41 thousand in the Golan Heights. Israel's total population in 2009 was 7 485 thousand, thus implying that those living in these areas represent 10.3% of the total. The share of the housing stock is likely to be of a similar magnitude.

Key features of the housing sector

Israel's housing market is driven by the same broad influences as in other countries (Table 1.1). Demographic and societal developments fundamentally govern demand for the number of dwellings and have been particularly influential in Israel's case. Population growth is high compared with most OECD economies and has at times been profoundly influenced by immigration. Furthermore, Israel's distinct religious and ethnic groups typically live in separate communities. In addition, variation in dwelling size, features and location mean that housing demand in a wider sense is driven by additional factors, such as the level of household income. Of course demand is divided between that for rental accommodation and owner-occupied housing; as in a number of other OECD countries, the latter is dominant. However, the housing market is also unusual in that most land is state-owned, and the market operates via long-term leases. The supply-side response to the various facets of housing demand depends fundamentally on space constraints (Israel has a high population density in its habitable areas) and on regulations governing housing construction and the replacement, renovation or extension of existing dwellings. The regulatory and planning system is strongly centralised in Israel, as is the administration of housing support (such as public housing and rent support).

Table 1.1. **Broad influences on housing markets**

	Influences
Overall market	Demand: demographics and other influences on the number and composition of households, macroeconomic conditions. Supply: population density, planning and building regulation, competition in construction.
Owner-occupier sub-market	Tax treatment and fees relating to owner-occupancy (purchase, ownership and sale), access to credit (mortgage regulation), housing support (mortgage support).
Rental sub-market	Rental legislation and regulation, prices and conditions relative to home ownership, housing support (public housing, rental support).

Source: Based on Andrews *et al.* (2011).

Most land is state or quasi-state owned

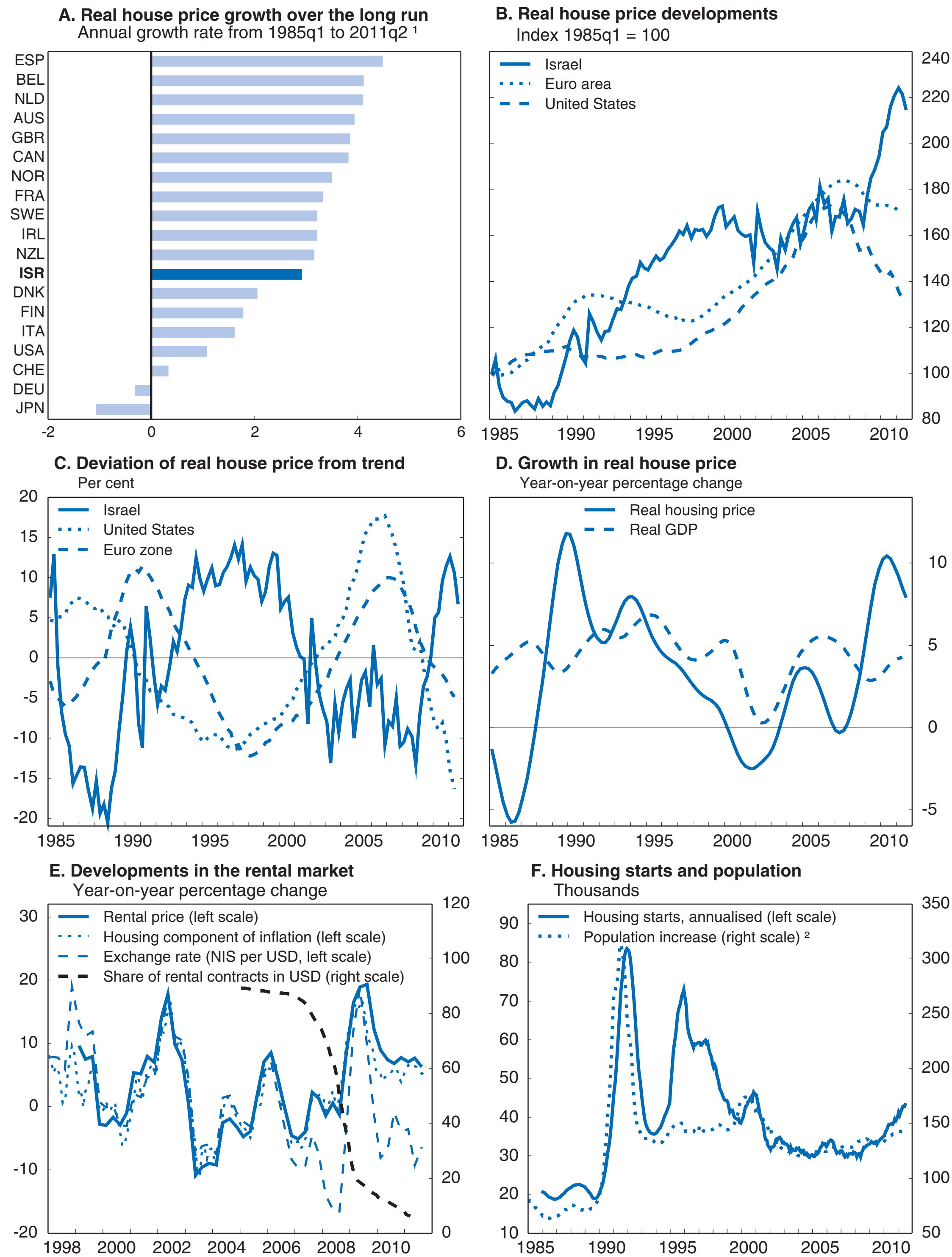
Most land in Israel (in total 93%) is publicly or quasi-publicly owned and is managed by a special government agency (the Israel Land Administration, ILA). Some 81% of Israel's land area is owned either directly by the state or is under the auspices of a special body (the Development Authority). The directly owned state land originates from the transfer of land from the British Mandate (which itself had inherited much of it from the Ottoman Empire), while land under the Development Authority originates from properties abandoned (mostly by Arab residents) during the 1948-49 war. In addition to the state-owned land and that under the Development Authority, 12% of land is owned by the Jewish National Fund (JNF), a non-profit organisation set up at the end of the 19th century. In an agreement reached in 1960, the Fund placed its land holdings under ILA jurisdiction in exchange for half the seats on the ILA's governing board; this arrangement remains in place today. In line with the Fund's origins, leases of its land remain reserved for Jews. Nevertheless, the ILA can circumvent this. For instance, title swaps between JNF-owned and state-owned land are sometimes arranged, so that, for example, an Arab household can purchase a lease (Alterman, 2002a). There are, however, complications regarding title to some land in the Negev desert, where a longstanding dispute between the State of Israel and the local Bedouin community (OECD, 2010a). A government resolution was passed in 2011 that implements a solution along the lines proposed in 2008 by the government-established Goldberg Commission.

All in all, therefore, the ILA plays a key role in determining land use and hence strongly influences the pace of property development. The construction and sale of new dwellings is typically carried out by property developers. But, it is also fairly common for buyers to organise planning and construction directly through "purchase groups", an approach which, until recently, had tax advantages. A further consequence of the unusual system of land ownership is that most "homeowners" are in fact leaseholders, although changes are underway on this front (see below).

A history of unusual price developments

The recent surge in house prices reflects a longstanding pattern of atypical market development compared with other OECD countries. True, the long-run average rate of increase in real house prices (prices adjusted by consumer prices) has not been unusual (Figure 1.1, Panel A). For instance, from 1985 to 2010 the average real price growth was 3.5%: higher than growth in United States but below that in a number of other countries. However, the pattern of prices has not followed trends elsewhere (Figure 1.1, Panel B). Real prices surged in the early 1990s when those in the United States and Europe were generally declining. Also, they remained flat during the long upswing elsewhere from

Figure 1.1. **Developments in prices and construction activity over the long run**



1. Or latest available data. House prices are deflated by the CPI for Israel, the private consumption deflator for the other countries.
2. Change from 12 months earlier ('000).

Source: Central Bureau of Statistics; Bank of Israel; OECD, *OECD National Accounts Database*; and OECD, *OECD Economic Outlook 90 Database*.

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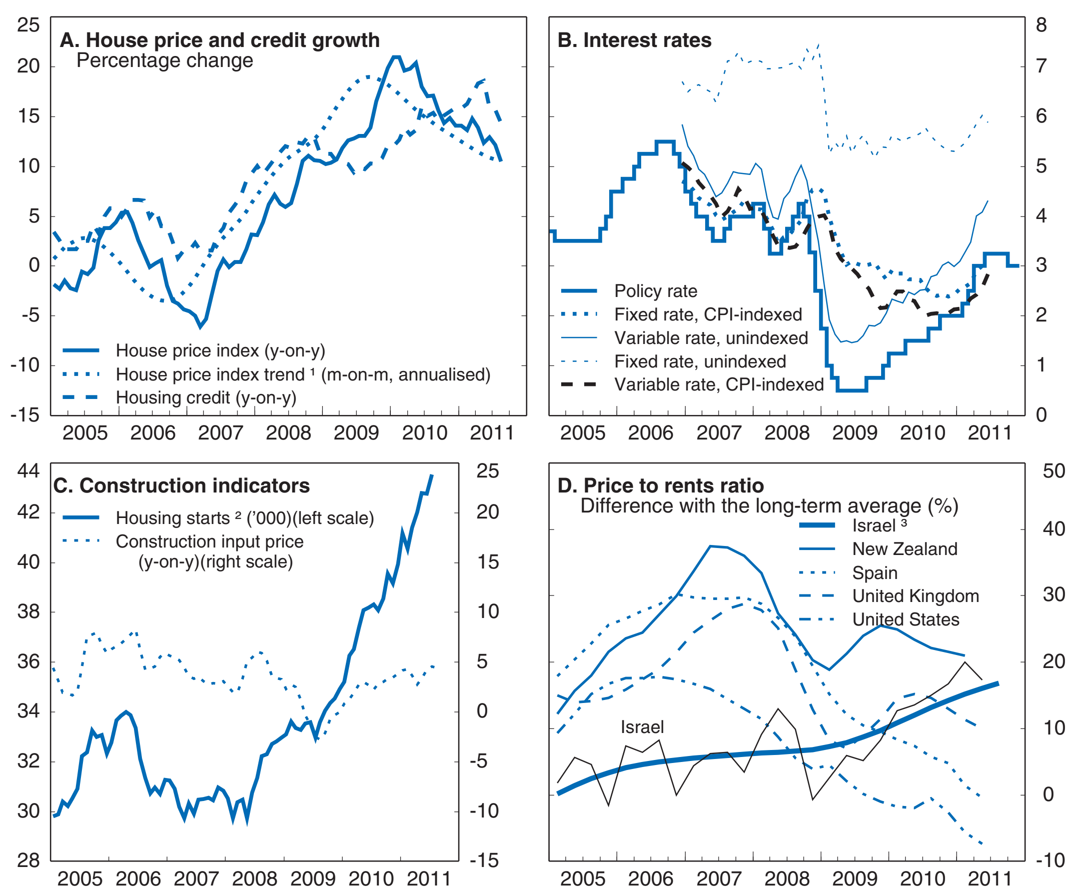
the late 1990s. Nominal price developments have also been unusual. Until the late 1990s relatively high inflation meant that nominal price increases were much greater than in most OECD countries. Indeed, the cumulative increase in nominal prices since 1990 remains one of the highest in the OECD area. Deviations from a linear trend (calculated from Q1 1985, Figure 1.1, Panel C) have been substantial, ranging from 20% below trend to nearly 16% above. Also, the correlation over time between real house-price growth and the pace of growth in the economy as a whole is not terribly strong (Figure 1.1, Panel D). This contrasts with residential property markets elsewhere, which typically track the business cycle quite closely (see for example: OECD, 2004; Catte *et al.*, 2004; IMF, 2008).

The recent surge in house prices is partly linked to the lowering of interest rates in response to the 2008-09 global financial crisis. Prior to 2008 there had for some time been little movement in the representative house price (Figure 1.2, Panel A), but by the end of that year it was rising by about 10% year on year. There was a brief period where price rises flattened and credit growth fell, but both subsequently picked up again. If a trend is passed

Figure 1.2. **The recent surge in house prices**



1. Trend has been calculated using a Hodrick Prescott filter, lambda = 400.
2. Total over previous 12 months.
3. Data have been smoothed with a Hodrick Prescott filter, lambda = 100.

Source: Central Bureau of Statistics, Bank of Israel and OECD.

StatLink http://dx.doi.org/10.1787/888932538510

through the month-on-month price changes, it suggests price appreciation peaked in mid-2009 at around 20% annualised (year-on-year increases of course peaked somewhat later). More recently, credit growth has also slowed.

Rental-price movements have also been somewhat unusual. Various forms of dollar indexation emerged during the period of high inflation in the 1970s and 1980s and persisted in rental contracts (and some other sectors of the economy) long after inflation had been brought under control (see OECD, 2010b). Until 2007, close to 90% of rental contracts were denominated in US dollars, bringing a direct translation of exchange-rate movements into changes in the shekel value of rents. As a result, exchange-rate movements explained practically the entire variation in rental-price inflation (Figure 1.1, Panel E). This was of particular significance for monetary policy, as since 1999 the housing component of inflation has been based on rental costs. However, strong appreciation of the shekel against the dollar from mid-2007 until mid-2008 prompted a wholesale switch to shekel-denominated rents. Indeed, less than 10% of contracts are now specified in dollars. As a result, the direct connection between exchange-rate movements and rental prices has practically disappeared.

Demand and prices have been strongly affected by immigration

Mass immigration following the collapse of the Soviet Union in the early 1990s prompted a surge in housing demand and construction activity. The main wave of immigration occurred in 1990 and 1991 (Figure 1.1, Panel F), and efforts to meet housing demand comprised mainly publicly initiated developments concentrated in peripheral areas in the form of mobile homes and rapidly constructed low-cost dwellings.[1] This was followed by a second wave of construction activity, largely in central districts and initiated by the private sector, reflecting moves out of temporary dwellings and the gravitational economic pull from the central regions.

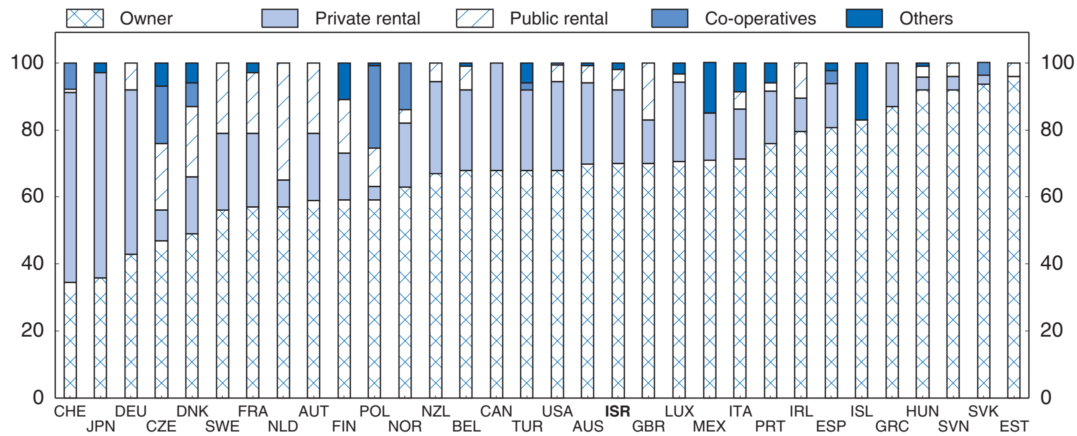
The wave of immigration also explains much of the price development during the 1990s. *Prima facie,* the surging prices in the early 1990s reflected straightforward supply shortages, despite the significant policy efforts to boost construction. But the situation was in fact more complex. Generous mortgage-subsidy schemes for the new immigrants (see below) are thought to have been a significant influence. Indeed, there is evidence confirming that sellers managed to directly capture some of the mortgage subsidy in the form of price increases.[2] Furthermore, because the boost provided by the mortgage subsidies was only temporary, this partly explains why prices in the latter part of the 1990s and into the 2000s were rather flat. Some also argue (Bank of Israel, 2010, for instance) that the 1990s construction booms actually overshot demand, thereby also contributing to weak subsequent price growth.

Most housing is owner occupied

As later sections attest, settings in several policy areas deliberately promote home ownership and have without doubt had an impact. Around 70% of the dwelling stock is occupied by home owners, 22% by private rentals and only 6% by public rentals (Figure 1.3). This tenure structure resembles that in English-speaking OECD countries such as Australia, the United Kingdom and the United States (see Andrews and Caldera-Sanchez, 2011). As in those countries, developments in prices and mortgage credit conditions are an important influence on many households' financial positions and can potentially have a profound impact on aggregate disposable income and consumption, as well as the stability of the financial system.

Figure 1.3. **Tenure structure across countries**

Per cent of dwelling stock, 2009



Source: Andrews *et al.* (2011), "Housing Market Policies and Structural Policies in OECD Countries", *OECD Economics Department Working Papers*, No. 836.

StatLink http://dx.doi.org/10.1787/888932538529

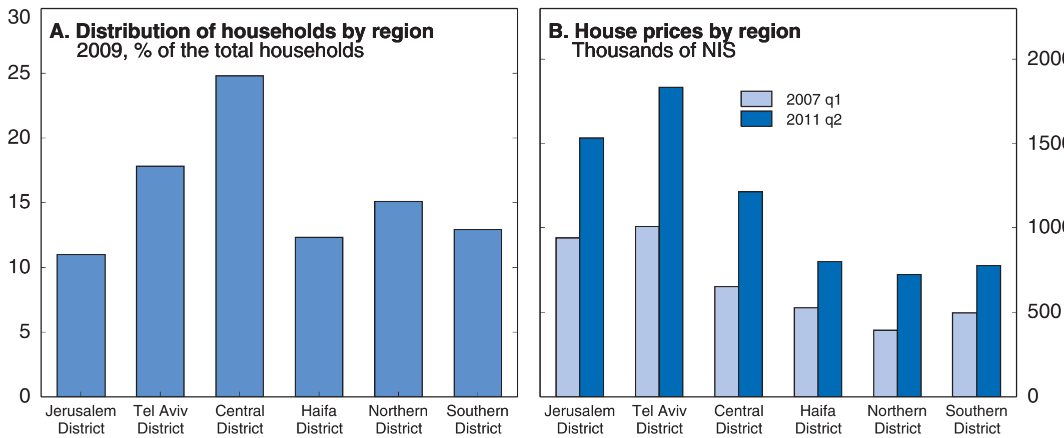
A very large share of Arab households (over 90% according to Haider, 2008) are owner-occupiers, despite relatively low incomes on average. Indeed, Arab households own a large proportion of the 7% of land area that is privately owned (see above). Properties are typically passed from one generation to the next, and so many families do not face mortgage (or rental) costs. In addition, the Arab population does not benefit from housing support for immigrants (see below), as permanent immigration is reserved for Jews only. Given this situation, it is inherently difficult to design housing support in Israel such that it plays a comprehensive and even-handed role in supporting low-income households (the Arab-Israeli community accounts for 20% of the total population and a larger share of low-income households, see Assessment and recommendations).

Geographic segmentation takes place along religious and ethnic lines

Geographic segmentation of the population according to religion and ethnic background is pronounced. Most obvious in the available data are regional differences in the location of Arab and Jewish households. According to the Central Bureau of Statistics, the Arab population accounts for about half of households in the Northern District but relatively small shares of households in the Tel Aviv and Central Districts, which cover Israel's largest urban conurbation (Figure 1.4). Indeed, only 1.3% of households in the Tel Aviv District are Arab-Israeli, compared with 16% for the country as a whole. Furthermore, the regional data do not reveal the full extent to which the different ethnic and religious communities live separately. Cities and towns tend to be divided into distinct Jewish and Arab neighbourhoods, and smaller localities are usually either predominantly Arab or Jewish.[3] Also, within the Jewish population itself, communities are often dominated by particular groups. Ultra-orthodox households, in particular, often live in distinct parts of cities or in separate communities. Within the Arab-speaking population, some minorities also live in distinct areas, notably the Bedouin.

Regional and local segmentation of communities along cultural and other dimensions is common in other OECD countries but typically has less economic (and indeed political) significance than in Israel. In terms of economics, segmentation in theory reduces

Figure 1.4. **Regional distribution of households and regional house prices**



Source: Central Bureau of Statistics.

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housing-market efficiency because the demand side will react less to price signals due to preferences on what type of community households are willing to live in. For some communities, segmentation may also be influencing access to labour markets. For example, Arab households may be reluctant to move to the economically prosperous area of Tel Aviv and surrounding districts because of the dearth of communities in which they might feel "at home". This said, Israel's relatively small geographic size means distances between many towns and cities are commutable, which widens the ability somewhat for households to exercise preferences as to where they live without prejudicing their employment opportunities.

Socio-economic segmentation is also illustrated by sizeable regional house-price differentials. House prices in the north and south of the country, where Arab communities are concentrated, are significantly lower than those in the central belt. For instance, the average price in the Northern District is currently about 30% of that in the Tel Aviv area, and the gap has widened in recent years (Figure 1.4). *A priori*, concerns about security in certain areas of the north and south are likely to be amplifying the price difference with the central belt. However, a study of regional price differences (Sayag, 2011) found that tax concessions on housing in border areas in some cases outweigh the negative effect on prices from security concerns.

An overview of the economic policy issues

A wide range of policy settings affect house prices and raise other issues. In broad terms they can be classified into: *i)* policies affecting housing construction; *ii)* policies relating to the purchase, ownership and sale of dwellings; and *iii)* policies primarily motivated by social concerns. A synopsis of motivations, typical issues and the Israeli situation is shown in Table 1.2. Most measures and programmes can be justified either in terms of market failure, or as vehicles for accommodating social or other policy agendas as conceptually embodied in the social welfare function. In terms of market impact, a number of policies primarily influence the split between the owner-occupied and rental segments and imply stronger or weaker overall demand for housing (not only in terms of the number of dwellings but also their size, quality and location) and housing credit. There are some

Table 1.2. **Structural policy issues in housing**

Policy	Theoretical justification	Primary influences on housing market	Issues (typical and Israel specific)
Policies influencing construction activity (elasticity of supply)			
Land-use and building regulation	Externalities (*e.g.* congestion).	Supply responsiveness.	**Typical.** Tendency for excessive regulation, due to piecemeal accumulation of measures, and resistance from vested interests to abandon or reform regulation. **Israeli**. Unusually high degree of centralisation in planning.
Policies relating to purchase, ownership and sale of housing			
Credit regulation (especially for mortgages)	Micro-prudential (financial stability).	In broad terms, lighter mortgage regulation favours home ownership, supports demand and prices.	**Typical.** The financial crisis of 2008-09 has focused attention on strengthening oversight and regulation of housing credit. **Israel.** *Prima facie,* few concerns about regulation and oversight. Macro-prudential tools appear adequate.
Taxes and fees at the point of sale	Coverage of administrative costs, fiscal revenue, brake on price volatility.	Favours renting.	**Typical.** Often considered as too high, given the balance of pros and cons, particularly because these are distortionary taxes. **Israel.** Not a significant issue.
Income-tax treatment of housing during ownership (implicit rent issue)	Equal tax treatment across assets.	In theory helps ensure unbiased demand for home ownership.	**Typical.** Information failures prevent "first-best" solutions and for some countries treatment is favourable; in effect, a tax sweetener for middle and upper-income households. **Israel.** Not a significant issue.
Property tax	Reliable tax base, relatively non-distorting, can (in theory) facilitate local-government democracy.	Depends how property tax is levied.	**Typical.** Despite their theoretical attractions, property taxes are typically not significant. One explanation is that local governments are proficient at tapping into central government funds instead (which is preferable from their perspective). **Israel.** Raises more revenue in property taxation than many countries.
Exemptions from capital gains on the sale of property	No obvious theoretical justification.	Favours home ownership, supports demand and prices.	**Typical.** Exemption for owner-occupiers is very widespread and effectively a sweetener for middle- and upper-income households. **Israel.** Extensive exemptions (though pared back recently).
Policies largely driven by social/ redistributive concerns or other agendas			
Rental regulation	Market imperfections, notably unequal bargaining power between landlords and tenants.	Strong protection of tenants favours renting. In some cases regulation divides rental market between "protected" and "unprotected" segments.	**Typical.** Risk of discouraging housing supply, investment in dwelling maintenance and household mobility. **Israel.** Regulation may be too light.
Public housing	Social concerns (in theory aligned with social welfare function).	Favours renting among low-income households. May influence private-sector rental prices.	**Typical.** May crowd out private investment. Can lead to (undesirable) residential segregation if poorly designed/enforced. Reduced work incentives and household geographic mobility. **Israel.** Public housing sector is small; eligibility conditions are unusual.
Rent allowances (in private rental market)	Social concerns (in theory aligned with social welfare function).	Favours renting.	**Typical.** Risk of "over consumption" of housing among target populations (typically low-income households). May reduce work incentives. **Israel.** Similar issues may apply to some extent.
Mortgage support	Social concerns (in theory aligned with social welfare function).	Favours home ownership.	**Typical.** Does not typically assist very low-income households. Sometimes prolonged and significant fiscal expense. **Israel.** Has been used extensively, with unusual eligibility conditions and specific target populations and regions.

Source: Based on Andrews *et al.* (2011).

common themes among the specific policy issues: risks of over-regulation, unwarranted support to middle- and upper-income earners and negative behavioural impacts of housing support.

The most immediate economic policy issue in housing is the rapid rise in prices in recent quarters. Admittedly, in recent months price increases according to the Central Bureau of Statistics' hedonically adjusted index have eased (Figure 1.2), and other data also suggest the market has come off the boil. However, this does not guarantee there will be a soft landing. The price-to-rent ratio is already some 20% above its long-term average value (Figure 1.2), and much more so for certain localities and types of apartment. By this measure the market may already be in dangerous territory, and recent market developments may mark the beginning of an undesirably fast contraction. The housing market in the United States collapsed when the price-to-rent ratio was only about 15% above its long-term average. This said, housing markets in Spain and the United Kingdom reached rent-price ratios of 30% or more above average before sharp adjustment, and the ratio in New Zealand has reached even higher levels without sharp declines. It has been estimated that between one-third and one-half of house-price increases in Israel can be attributed to low interest rates (Bank of Israel, 2011). Although further normalisation of the central bank's policy rate has been put on hold (indeed, the rate was reduced in October 2011), it is believed that lagged effects from previous hikes will continue to temper price increases for a while. Macro-prudential and structural measures have also been taken to cool the housing market. Credit conditions on mortgage lending have been tightened in various ways, planning approval accelerated and tax settings altered to encourage the sale of properties (these are detailed below). If the recent slowing of the market indeed accelerates, then a reversal in some of these measures may be required to help avoid a "hard landing" entailing a sharp correction in prices and property sales.

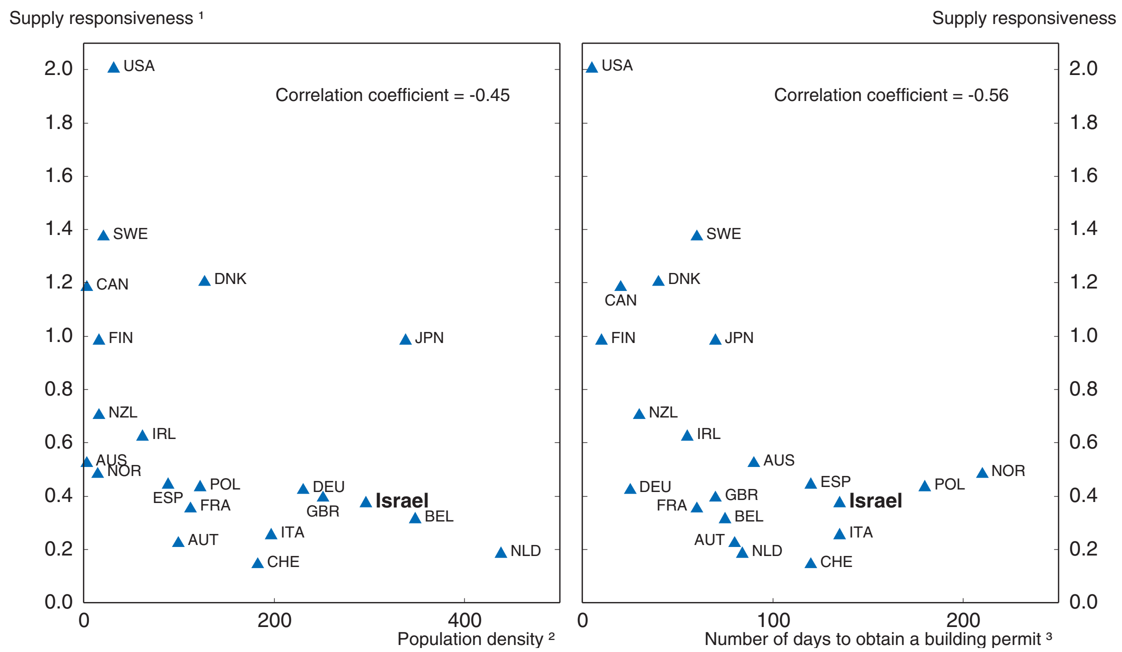
A second policy issue is that, as in many other OECD economies, policy settings and programmes have tended to favour home ownership excessively. This has potentially exacerbated the scale of recent price increases. Moreover, there is OECD-wide evidence that tilting policies towards home ownership can contribute to problems of labour immobility (Caldera-Sanchez and Andrews, 2011). Incentives for home ownership mainly include generous tax exemptions on capital gains and a general policy of encouraging home ownership for certain groups (especially in particular areas of the country). Indeed, housing support is unusual in several respects and only weakly and selectively targets low-income households. This represents a third structural weakness in housing policy.

Supply responsiveness: scope for streamlining planning regulation

Countries with comparatively scare land available for building new homes, such as Israel, tend to have housing supplies that are less responsive to higher prices. Thus, Israel's high population density puts the housing market at a natural disadvantage (Figure 1.5). In addition, at least according to one indicator, planning and building regulations are relatively cumbersome in international comparison. Such regulations can be viewed as mechanisms for overcoming externalities in land use (*e.g.* environmental externalities, impacts on transport systems and congestion). To some extent, therefore, there is probably a connection between the stringency of planning regulation and population density, because some externalities intensify when people live in close proximity. Nevertheless, it is unlikely that red tape in housing can be fully attributed to high population density, and there is without doubt room for streamlining regulation and procedures without excessively compromising the quality of outcomes. At least in the past, approval and permit processes have taken about 2½ years from the time land is released for development by the authorities to the moment when construction begins (Bank of Israel, 2011, p. 72).

Figure 1.5. **Price responsiveness of supply *vis-à-vis* scarcity of land and land-use regulations**

Cross-country correlation



1. OECD estimates of country-specific supply responsiveness based on econometric methods.
2. Population density measured as population per km^2.
3. The number of days to obtain a building permit is obtained from the World Bank Doing Business (2009) indicators.

Source: Johansson, Å. (2011), "Housing Policies in OECD Countries: Survey-based Data and Implications", *OECD Economics Department Working Papers*, No. 836.

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Central government's role in property development should be pared back. Central government has considerable, and in many respects excessive, influence over the pace and location of property development in Israel. The associated planning and approval processes have been criticised by many as too rigid and slow, generating bottlenecks in the supply of new housing. Much of central government's influence stems from Israel's unique system of land ownership and, linked to this, the ILA's role in land management. Crucially, the ILA approves the release of land for development and therefore has a potentially profound influence on where and when new housing is built. In the past at least, development permits issued by the ILA appear to have given more priority to regional policies than market developments. For instance, according to Bank of Israel (2011, p. 75) new permits in 2009 and 2010 were concentrated in the Jerusalem region and the south, with rather less focus on the north, and notably the centre, where prices have been rising fastest.

Legislation allowing the conversion of land leases to full legal ownership in selected areas has been passed. In 2009 the Land Reform Bill included provisions allowing leaseholders on 200 000 acres of land held by the ILA (about 5% of ILA-regulated land) the option of purchase. Half the land will be made available by 2014, the remainder thereafter. A low regulated price will be set for land in peripheral areas, while the price in central districts will be based on estimated market value. The somewhat modest release of land for conversion partly reflects concerns that property developers could otherwise corner local land markets. Side conditions on purchase were added to the legislation as a further means to prevent this.

The option of switching to land ownership is broadly welcome and should be pursued further. This is the case even though legal ownership is unlikely to prompt an enormous improvement in housing-market efficiency. As Box 1.1 points out, in many respects the market already operates like those in other developed countries, despite the prevalence of leases on public and quasi-public land. Also, switching from leasing to ownership will not substantially alter planning regulations concerning land use. This said, legal ownership of land may improve access to credit in some instances. More importantly, conversion to legal ownership is a key building block in reducing the role of central government in the housing market and the often cumbersome red tape associated with it. Short of unforeseen difficulties with the current conversion option, additional releases of land allowing conversion to private ownership are recommended in the coming years.

Box 1.1. **The influence of leaseholding on the housing market**

Despite the fact that most property "owners" are in fact leaseholders, the housing market is very similar to one dominated by freehold ownership. A number of factors contribute to this, most notably:

- The importance of privately owned land is rather higher in the housing market than first appears, because it is concentrated in urban areas (much of the state-owned land is in largely uninhabitable areas, for instance in the Negev desert).
- When a lease on state (or quasi-state) property is first contracted, a lump sum is paid that represents the discounted value of rents for the term of the lease (typically 49 years). The calculation assumes annual rent is 5% of the estimated value of the property and uses a discount rate of 5%. Over a 49-year lease this means payment of 91% of the value of the property and is therefore very similar to purchase in this respect. Furthermore, in effect leases are for 98 years, because when the "up-front" payment was first introduced, it was agreed that no payment for a second 49-year lease would be required. There is a general presumption that when these leases approach maturity, further costless extensions will be made, so leases would be effectively in perpetuity.
- Leases can be freely sold or transferred, thus creating a secondary market that closely resembles a "normal" property market. The time-to-run on the lease has (at least to date) had no bearing on the price in this secondary market because of the "perpetual" nature of the leases just described.
- Nevertheless some features of the market remain unusual, in particular:
  - Leasing arrangements differ in rural areas. The system of "up-front" rental payment has not been adopted in such areas, and leases are generally three-year renewable contracts.
  - Various taxes apply when leases are transferred in the secondary market (see Table 1.4 below). They conceptually represent efforts to capture capital gains on state land holdings (without having to sell the land to do so). Also, transfers have to be approved, meaning the state retains powers to control who "owns" property.

Source: Alterman (2002a).

Plans to decentralise planning through reform of the ILA should be pursued more vigorously, but not without due regard for checks and balances. The Land Reform Bill laid the groundwork for substantial structural reform that would replace the ILA with a new body operating in a system of faster and lighter planning and administrative processes.

The reform also envisages decentralisation of detailed planning to municipalities and property developers. However, at the time of writing, little progress in implementation had been made. Also, concerns have been raised that the proposals do not specify appropriate safeguards for planning at the municipal level (Bank of Israel, 2010).

In parallel to these reforms, the authorities have taken special steps to speed up the approval of housing construction as part of their efforts to cool the market. These have initially involved speeding up planning and approval processes within the regular planning system. This has already had some impact. Construction activity has increased markedly since 2009, with housing starts now above the rate of household formation (there are roughly 39 000 new households per year). It is estimated there will be 44 000 housing starts by the end of 2011, which is an increase on the 2010 figure and the highest number since the early 2000s (Figure 1.1, Panel F). In addition, as of December 2010, farmers have been given incentives encouraging them to give up leases on land that has been approved for residential construction. This programme will potentially unblock the development of up to 12 000 new dwellings. And, in 2011 new legislation (the National Housing Commissions Law) has been passed establishing a temporary planning process based on new district-level committees that are responsible for the entire residential housing planning process. The goal is to expedite the approval of development projects for 113 000 new dwellings. But, care should be taken that this process contains adequate precautions so as to avoid construction projects that are regretted in the longer term.

The greater number of housing starts has increased demand for construction workers. According to data from the Central Bureau of Statistics in 2010 there were 192 000 employees in the construction sector (of which 157 000 were Israelis), compared with 178 000 in 2009 (of which 147 000 Israelis), an increase of about 8%. However, so far at least, official data do not indicate exceptionally strong increases in wages, which would suggest that the authorities should not bow to industry pressures to cancel reductions in the quotas for foreign workers (see OECD, 2011b), for an in-depth account of foreign workers in Israel).

Policies affecting purchase, ownership and sale

Various policies affect the process of buying, owning and selling property and often strongly influence whether households decide to purchase or rent. Therefore, these policies can affect price developments in the housing market, households' consumption and investment behaviour and the scale and nature of household credit supplied by the financial sector. This section deals with general regulations and policies. Targeted mortgage and rental support is discussed in later sections.

Regulation of housing credit: powerful policy tools governing mortgage lending

Mortgage regulation has long disciplined lending behaviour by banks by encouraging relatively low loan-to-value ratios (LTVs). This is principally achieved via loan-loss provisions, *i.e.* minimum amounts that banks must put aside to cover potential losses. The provisions are set such that the profitability of loans above certain LTVs is significantly reduced. Prior to recent moves to cool the housing market (see below), the provisions strongly discouraged LTVs of more than 70%. Additional loan-loss provisions are imposed on mortgages if repayments are in arrears, thus providing an additional disincentive to imprudent lending.

In other respects mortgage regulation (at least historically) has been relatively unobtrusive. For instance, (as is usually the case elsewhere) there are no regulations regarding the size of mortgage repayments in relation to income. Also, banks have had, until recently, a free hand in the type of mortgage that is sold. In practice, CPI-indexed mortgages, typically with 20-year terms (with either fixed or floating interest rates), have previously been the most common products. However, the low market interest rates prompted by the 2008-09 downturn generated a wave of demand for non-indexed mortgages with floating rates that closely track the Bank of Israel's policy rate. Indeed, in 2010 about half the number of new mortgages were of this form (Bank of Israel, 2011).

Mortgage regulation has been tightened as part of the set of measures to cool the housing market in light of the recent surge in prices. The first step was taken in June 2010 with an increase in loan-loss provisions for mortgages with LTVs above 60% (Table 1.3). Loan-loss provisions were later increased for larger loans, and most recently new minimum loan-loss provisions for all mortgages were introduced. In addition, reporting requirements have been increased. As from May 2011, the share of the variable-interest component in any individual new mortgage can no longer exceed one-third.

Table 1.3. **Recent changes to mortgage regulations**

Regulatory issue	Detail
Loan-loss provisions (May 2010)	Draft guidelines published advising banks to include an additional safety net provision of 0.75% of the value of the loan when the LTV is high.
Mortgage rules on "purchase groups" (July 2010)	Credit extended by banks to purchase groups buying more than ten units for construction has to be classified as credit to property developers, rather than mortgage credit.
Reporting requirements (July 2010)	Reporting requirements on mortgage lending increased. These now include information on the type of mortgage holder, the value of the asset, the proportion financed, outstanding balances and arrears on repayments.
Loan-loss provisions (October 2010)	Increased minimum loan-loss provisions stipulated on loans of more than NIS 800 000 in which the LTV is at least 60% and where the mortgage includes at least one quarter floating-interest component.
Size of variable-interest component (May 2011)	Variable-interest component of new mortgages limited to one-third of the total value of the mortgage.
Loan-loss provisions (May 2011)	New minimum loan-loss provisions introduced for all new mortgages. Loan-loss provisions for mortgage arrears also tightened.

Source: Bank of Israel.

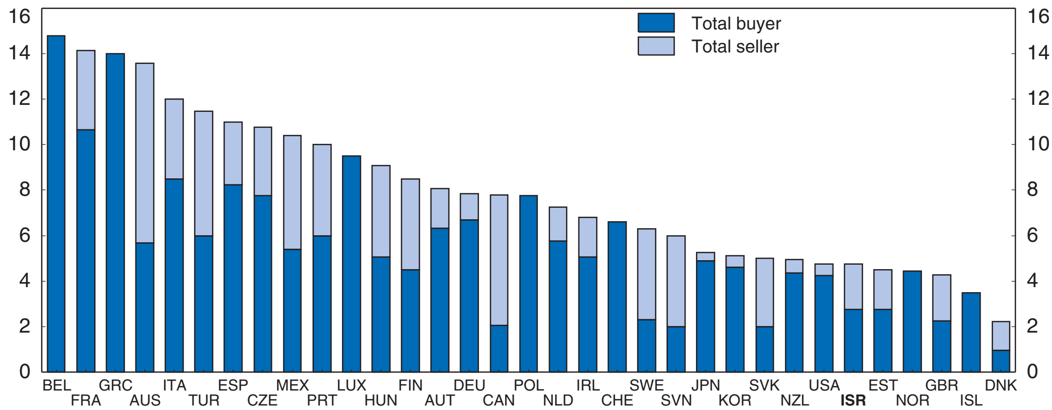
There is a risk that tighter mortgage regulation is prompting a rechanneling, rather than a reduction in housing credit. For instance, banks may have reacted by taking a more liberal view of applicants' financial commitments and indeed may have been ramping up non-mortgage lending to compensate for the tighter mortgage regulations. Under current reporting requirements, the authorities have little means to gauge and influence banks' assessment of credit worthiness for mortgages, including whether the sizeable deposit required for a mortgage is itself financed by some form of credit.

Transactions costs are low

Transactions fees and taxes at the point of house purchase are admirably light (Figure 1.6). When such charges are high, then house-price volatility may be reduced, but this benefit is probably outweighed by the adverse effect of high transactions fees on residential mobility (Andrews *et al.*, 2011). In Israel, there is only one special tax imposed on purchase (Mas Rechisa), and private purchases of primary residences up to a certain value are exempt (Table 1.4). As part of a number of measures to discourage so-called purchase groups, a legal loophole that had allowed them not to pay VAT on the cost of construction was closed in January 2011. Also, as of February 2011 the purchase tax has been temporarily raised for those buying for investment purposes; the higher rates will apply in 2011 and 2012.

Figure 1.6. **International comparison of transaction costs in house purchase**

2009



Source: Johansson, Å. (2011), "Housing Policies in OECD Countries: Survey-based Data and Implications", *OECD Economics Department Working Papers*, No. 836.

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Table 1.4. **Taxes and fees relating to house purchase**

Type of tax	Detail
Transaction fees and taxes at time of purchase	
Mandatory insurance for property under construction	Contractors must arrange insurance on payments for property under construction (the cost of the insurance usually borne by the buyer).
Purchase tax (Mas Rechisa)	For primary residences there is an exemption from purchase tax for properties up to a certain value (currently NIS 1.35 million); above this value the rate ranges between 3.5 and 5%. For non-primary residences the tax has temporarily been increased and ranges between 5% and 7% of the property value (previously it ranged from 3.5% to 5%).
Sales tax (Mas Mechira) (terminated in 2007)	This tax was 2.5% on the sale of residential property as a business (0.8% in the case of building contractors selling property).
Tax issues during ownership	
Tax treatment of mortgages	No tax relief on mortgage interest payments, but also no account of implicit rental income from owner-occupancy in taxable income.
Municipal Tax (Arnona)	Paid by the end-user and based on surface area and type of property.
Tax treatment of rental income	Rental income accruing to businesses is subject to corporation tax while that accruing to households is partially exempt in the case of residential properties (rental income from commercial properties is taxed at the owner's personal or corporate tax rate).
Tax treatment on sale of property	
Capital gains tax (Mas Shevach)	Based on past inflation and a number of special allowances. Private households with only one residential property are exempt as long it has been held for at least 18 months. Additional properties are also exempt as long as they are held for at least four years. As part of efforts to boost the supply of housing, as from January 2011 those owning a second home have been exempted from the tax as long as the home is sold in 2011 or 2012. However, from 2013 onwards the minimum holding period will increase to eight years and some other exemptions will be terminated. The rate of tax was reduced from 45% to 20% in 2000, but the reduction was grandfathered, *i.e.* sellers were charged a rate reflecting the proportion of their tenure spent at the 45% rate. A recent reform removed the grandfathering, *i.e.* all sellers are now charged 20%.
Income tax	Contractors and developers that sell real estate pay income tax instead of capital gains tax on the sale of such property.
Land Betterment Tax (Hetel Hashbacha)	This is a municipal tax paid upon sale of investment property that has benefited from an increase in value due to a land-use zoning change or the approval of additional building rights. The tax is 20% of the calculated real betterment accrued during ownership. Exemption from the tax is allowed for build-and-vacate projects and for improvements strengthening structures against earthquakes.

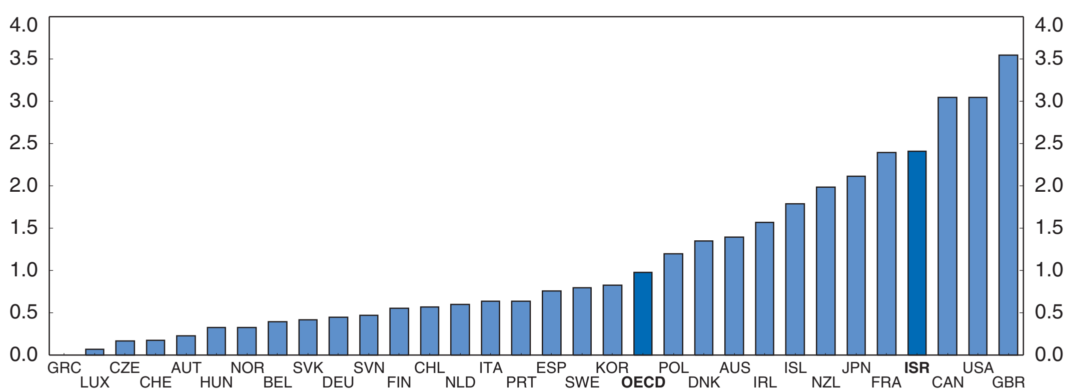
Acceptable compromise in tax treatment during ownership

The tax treatment during ownership of housing assets follows a reasonable "second-best" approach. Ideally owner-occupiers would be taxed on their imputed rental income but allowed to deduct mortgage-interest payments. However, in most countries, including Israel, implicit rents are not taxed because of the challenges and potential controversies in their calculation. At the same time, and similar to some other countries, households cannot deduct mortgage interest from taxable income, which partially compensates for the failure to tax implicit rents.[4]

Property taxation is more extensive in Israel than in many other OECD economies but nevertheless could be exploited further. The tax (Arnona) is based on the surface area and type of property and is a significant source of revenues for municipalities. Indeed, revenues are equivalent to 2.5% of GDP; in most OECD countries such revenues are less than 1% of GDP (Figure 1.7). In broad terms this is welcome, given the low risk of evasion, less distortionary effects on economic behaviour compared with other tax bases, and reasonable progressivity. However, there are often shortfalls in revenue collection in poorer municipalities, which contribute to their financial difficulties and widen the differences in local tax revenues across jurisdictions. Unless solutions to this can be found then making greater use of the Arnona as a source of revenue will be problematic.

Figure 1.7. **International comparison of recurrent taxes on property**

As a share of GDP, 2009[1]



1. Or latest available year.

Source: OECD.stat, *Tax Revenue Statistics Database*.

StatLink http://dx.doi.org/10.1787/888932538605

The tax treatment of rental income makes it relatively attractive for private households to own and rent out properties. While rental income accruing to business entities is subject to corporate tax, private households, up to certain limits, do not have to declare such income. These exemptions should be reconsidered so as to put property ownership on a more equal footing with other assets.

Excessively generous tax exemptions in capital gains from property sale

Exemptions from tax on capital gains from property sales (Mas Shevach) are unusually generous. As in many countries, private households do not pay capital gains tax on the sale of their principal residence. However, under certain circumstances there are also exemptions on additional properties. This, combined with exemption of rental income, implies generous treatment for relatively affluent households that is likely to further distort the consumption/

saving decision. A temporary additional exemption was granted as part of measures to cool the housing market (Table 1.4). This measure was understandable in light of the concerns about the effects of high house prices. But, for the longer term the authorities should look towards reducing the number of exemptions. Ideally, all exemptions should be removed; at a minimum, exemptions should be limited to the principal residence only. In 2011, some progress was made on this front, notably with the increase in the minimum holding period for exemption from capital gains tax on non-primary housing from four to eight years (Table 1.4).

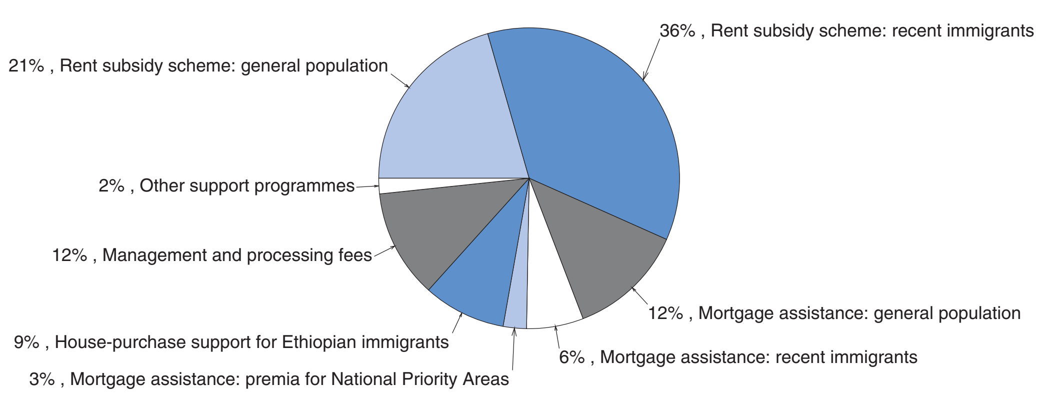
There is an additional form of capital gain tax, the Land Betterment Tax (Hetel Hashbacha) which is a municipal tax imposed when leases are sold on the open market if the land associated with the lease has been reclassified (re-zoned) and consequently increased in value during the current leaseholder's tenure. It is effectively a mechanism to capture some of the windfall gains in land values generated from approval of land for property development, without having to actually sell the land. Consideration should be given to raising the tax rate, so as to shore up the state's stake in windfall profits from re-zoning and reduce the incentives for property developers to try to influence planning decisions.

Public support for housing

Public support to housing in Israel reflects a number of motivations and agendas. A large share of spending goes towards helping recent permanent immigrants as part of Israel's wide-ranging support and integration measures. For instance, in 2009 51% of central-government housing support went either to general rent- and mortgage-subsidy schemes for immigrants or on special schemes for Ethiopian immigrants (Figure 1.8). Deeper investigation of eligibility criteria and benefits reveals other reasons for housing support. Notably, there is additional mortgage support for those in peripheral areas (Table 1.5). Regional incentives of this sort can be justified on economic grounds as countering negative externalities (*e.g.* congestion) arising from the gravitational economic pull of the central areas of the country. However, this is almost certainly not the sole motivation. Special consideration is also given to those who have completed military service, reflecting a wider range of benefits that is designed to encourage and motivate military and reserve service but which also effectively means differential treatment of Jewish and Arab communities.

Figure 1.8. **Central-government spending on rent subsidies and support for house purchase**

2009 outturn, total spending NIS 2.2 billon



Source: Ministry of Construction and Housing budget 2009.

Table 1.5. **Central-government housing-support schemes**

Scheme	Key eligibility conditions	Benefit amount
Social housing	● Families and single-parent families with at least three children must either be receiving National Insurance income support or have combined wage income below a certain level (currently NIS 5 537). In addition they must have a score of at least 1 400 in the points system (see main text). ● Other households (except groups below) must pass a different means test and have a score of at least 1 400 on the points system. ● Recent immigrants apply via a separate means test run by the Ministry of Absorption. No points are required. ● Special conditions also apply for households with disabled persons.	● Rents in tenancies given since 2005 are based on market rents less a discount that varies according to family composition and income. Tenancies granted prior to 2005 remain under a previous system (this is only relevant to those in receipt of National Insurance income support). Overall, the average rent in social housing is NIS 277 per month.
Rent subsidy scheme	Eligible groups comprise: ● Families (including single-parents) and couples without children. Eligibility is based on family composition and earnings. Where there is at least one disabled household member, eligibility is based on receipt of National Insurance income support. ● Single-persons aged 55+ who receive National Insurance and single disabled persons aged 21+. ● All immigrants are eligible for rent subsidies from the second to the fifth year following arrival (assistance for the first year is provided through the Ministry of Absorption).	● Benefit amounts vary according to household composition, location and income level. ● Benefits are tapered beyond a certain level of income.
General mortgage assistance	● Limited to families (including single-parents) and couples without children. ● The maximum loan possible depends on the score in the points system, time spent in military service and location (see Annex 1.A1 for further detail). ● A separate system operates for households in kibbutzim.	● Support guarantees a maximum CPI-linked mortgage rate of 4%. Thus, subsidies are only triggered when interest rates rise above this threshold. ● Since 2008 the support to households scoring up to 1 999 on the points system (or 1 699 points for those purchasing in a National Priority Area) comprises subsidies on regular bank mortgages. Households with point scores above these levels are eligible for "direct" state-backed mortgages.
Other support for home purchase	● Schemes promoting the purchase of public housing (the latest scheme ended in 2010 and has not been replaced, see Annex 1.A1). ● Special system of grants and loan subsidies for new Ethiopian immigrants. ● Loans/grants for house purchase and infrastructure in 28 communities located in National Priority Area A regions (see main text).	

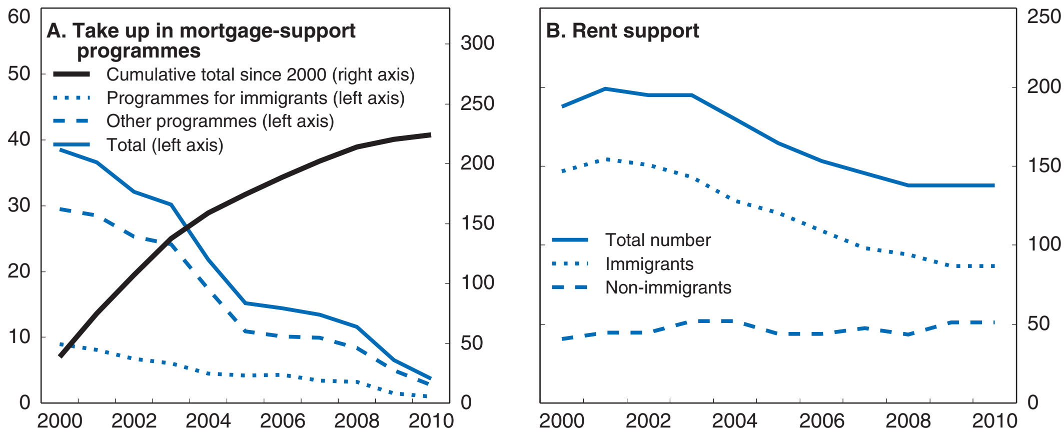
In broad terms, the number of households receiving housing support has been declining for some time. The number of households in low-rent publicly owned dwellings has fallen dramatically largely due to schemes allowing the sale of such housing. In addition, the numbers of recipients of rent support and new entrants to mortgage-support schemes have fallen (Figure 1.9). This partly reflects downward trends in permanent immigration, tighter eligibility conditions and, in the case of mortgage support, weaker incentives to apply for schemes because of falls in mortgage rates on the open market.

Rent subsidies are the most common form of regular housing support

Cash subsidies to households renting in the private sector ("rent participation grants") are the most common form of housing support and account for a significant share of the Ministry of Construction and Housing's budget. In 2010, a little under 140 thousand households received rent subsidies (Figure 1.9), which is much lower than in the early 2000s due to falls in the number of immigrants. In fact, the number of non-immigrants receiving support has increased slightly over this period. The rent subsidies are provided to all immigrants, irrespective of income, for the first five years of settlement in Israel. This should be reformed, for instance with the introduction of a means test, so as to focus spending on immigrants in need. In contrast, consideration should be given to making regular means-tested rent support more generous as part of wider efforts to reduce

Figure 1.9. **Trends in the number of households receiving housing support**

Thousands of households



Source: Ministry of Construction and Housing.

StatLink http://dx.doi.org/10.1787/888932538624

poverty. Rent support can play a useful auxiliary role in tackling poverty, because it brings some differentiation in welfare support according to the cost of living (rent support is calculated in relation to local market rents; see Table 1.5). As such, raising the value of rent support may well be warranted along with increases in other welfare measures, but the increases need to be carefully calibrated using micro simulations to ensure that they dovetail with other welfare and tax measures. In addition, some caution would be required because hikes in rent support may get passed through into increases in market rents.

Rental regulation may be too light

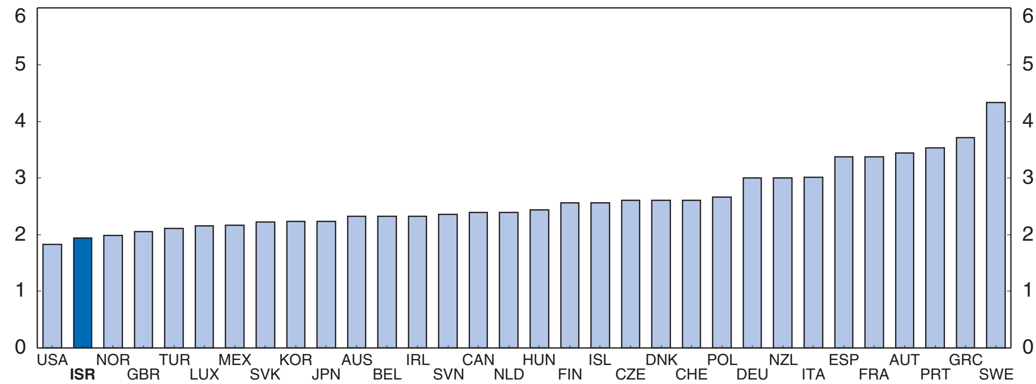
Rental regulation is very light in international comparison. There are no rules governing the level or rate of increase in rents, which is welcome. However, this liberal approach extends to all aspects of the rental contract to a degree that may not be optimal. Rental contracts are governed only by general legislation applying to movable and immovable property (the Hire and Loan Law, 1971). Hence, neither landlords nor tenants are protected by the type of specialised legislation on the rental of dwellings that can be found in other OECD countries, such as minimum notice periods and regulations on deposits. According to data compiled in a recent OECD study (Andrews *et al.*, 2011), Israel has the second lowest score in an indicator of landlord – tenant regulations (Figure 1.10). To be sure, such regulation can be too burdensome and lead to a thin market. Also, Israeli rental contracts drawn up between landlord and tenants typically do feature clauses on notice periods and so on. Nevertheless, some modest universal legislated criteria should be considered as a means of strengthening legal protection on both sides of the contract and encouraging the development of the rental market by setting some basic ground rules.

Access to public housing should be more uniform

Public housing is now on a relatively small scale in Israel, but it provides generous levels of support for those who are eligible. In 2010 there were around 65 000 publicly owned dwellings, a fairly small number against about 2.1 million households. This is partly the effect of a succession of schemes promoting the sale of public housing to residents. Between 1999 and 2010 some 33 000 dwellings were sold through schemes offering a

Figure 1.10. **Tenant-landlord regulations in the private rental market,**[1] **2009**

Scale 0-6: Increasing in protection for tenants



1. The indicator measures the extent of tenant-landlord regulation within a tenancy. It includes the ease of evicting a tenant, degree of tenure security and deposit requirements. See Johansson (2011) for details.

Source: Johansson, Å. (2011), "Housing Policies in OECD Countries: Survey-based Data and Implications", *OECD Economics Department Working Papers*, No. 836.

StatLink http://dx.doi.org/10.1787/888932538643

combination of discounts on the sale price and mortgages at preferential rates (see Annex 1.A1). The implicit value of support is substantial: the average rent in public housing is only NIS 277 per month, which is equivalent to USD 77 and much lower than market rents (according to official data, these averaged NIS 3 104 per month in the second quarter of 2011, for instance).

Access to public housing has several tracks (Table 1.5), most notably for the general population the eligibility criteria differ, depending on whether the households has at least three children or not. All groups have to pass some form of means test. In addition, access to public housing for non-immigrants is narrowed further by a somewhat unusual points system (this also features in mortgage assistance; see below). A score of at least 1 400 points is required and is based on: years of entitlement (this is either the number years of marriage or the number of years the applicant is aged over 30), number of children and how many siblings the adult members of the household have (see Table 1.6). Awarding points for siblings is unusual. It implies, for instance, a couple married for five years (worth 450 points) with three children (500 points) will pass the points test for public housing if they have at least five brothers and sisters (600 points), but not if they have four or less siblings (400 points). According to the Israeli authorities, the points for siblings reflect the fact that parents often help children with housing costs: thus children from large families are likely to receive less parental support than others.

The eligibility system should be made more uniform and simpler. At a minimum the distinction between households based on whether there are three (or more) children should be removed. Awarding points for siblings is likely to be a very inaccurate measure of whether a household has access to parental support and is therefore probably granting access to public housing for some and not to others in a somewhat arbitrary way. This dimension of the points system should be scrapped. In addition, as for rental support, the presence of a separate track for recent immigrants is questionable.

Table 1.6. **The points system used to gauge eligibility for public housing and mortgage assistance**

Value	Years of entitlement	No. of children	No. of siblings[1]
1	30	0	0
2	250	350	50
3	300	500	100
4	400	800	400
5	450	900	600
6	500	1 000	650
Each additional	50	100	50

1. Siblings are limited to family members who are resident in Israel.
Source: Ministry of Construction and Housing, Senior Deputy Director General's Office for Housing Assistance.

Until recently subsidised home purchase was on the wane

The substantial fall in support for house purchase in recent years is welcome. In the 1990s, there was fairly substantial subsidisation through direct grants for home purchases and mortgages under preferential conditions. Direct grants are now available only to Ethiopian immigrants. Mortgage support comprises a scheme available to the general public and (until recently) targeted schemes promoting the sale of public housing and measures for immigrants. Until 2011 take-up of programmes had fallen steadily. In 2000, around 38 000 new preferential-rate mortgages were granted, but by 2009 this figure had fallen to around 2 500, partly reflecting tighter eligibility rules. In addition, the guaranteed maximum interest rate of 4% (CPI-indexed) has become less attractive in recent times due to falls in mortgage rates available on the open market (see Figure 1.2, Panel B).

Unlike rent support and public housing, the general scheme of mortgage support does not entail direct means tests and is therefore potentially accessible for households with substantial incomes. Eligibility and the (maximum) size of mortgage provided depends on: the household's score in the points system (Table 1.6), length of military service and the location of the dwelling attached to the mortgage (see Annex 1.A1 for further details). For example, households scoring less than 1 400 points in the points system and with no premium for military service or location are eligible for a mortgage up to NIS 62 400 (about USD 17 300 at an exchange rate of 3.6), while a household with at least 2 200 points and the maximum premium for military service located in a National Priority Area (see Box 1.2) can be eligible for a mortgage of up to NIS 356 000 (approximately USD 98 850) (Figure 1.11). Although relatively few households currently access the scheme, the absence of any limit on household income for eligibility should be addressed.

In 2011 a new programme began, signalling a willingness to resume highly targeted mortgage support. The scheme targets 28 designated communities in National Priority Areas and was established following strong pressure from politicians representing certain communities. It provides support of up to NIS 100 000 for the purchase of homes and targets young families (one of the eligibility conditions is that applicants must not already own a home). The support is initially in the form of a loan but is converted to a grant (*i.e.* the loan is written off) as long as the household remains resident for at least five years. The scheme also provides subsidies to builders for the construction of related infrastructure. According to the government, the scheme will prompt 4 000 new housing starts per year. As with all such forms of support for house purchase, there is a risk that the subsidies will prompt increases in house prices and therefore be at least partially captured by existing homeowners and property developers, rather than the young families for whom it was intended.

Box 1.2. **National Priority Areas**

National Priority Areas were first established in 1998 under Government decision No. 3292, which established Class A and Class B areas, with the former receiving greater support than the latter. Legislation adopted in 2002 (Government decision 2288) re-defined the boundaries, but this prompted a court case, and in February 2006 the High Court determined that the legislation was unlawful, in particular because it discriminated against Arab localities. The Court stated that its verdict should be applied within one year, (*i.e.* by February 2007) and stressed that if new legislation was introduced it must not grant the government or its ministers general and sweeping powers in regard to the classification of localities as NPAs and the granting of benefits and increased budgets to these localities. However, the verdict was never applied, and the 2002 legislation remained operational until recently. Efforts to replace the 2002 legislation began in July 2009 when the Knesset passed the Economic Efficiency Bill, which included a generally worded statute that gives the government wide discretion in classifying localities and areas as National Priority Areas and distributing benefits to them in various domains and for various periods of time.

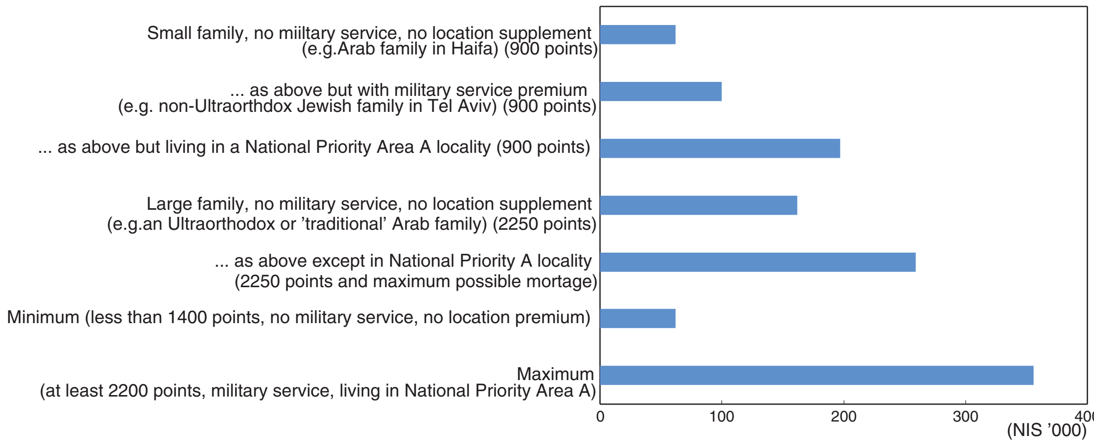
In December 2009, based on the powers vested by the new law, the government approved Decision No. 1060, which proposes a common map of NPAs for use in the following policy areas: housing and urban development, education, employment promotion, public infrastructure, and culture and sport. Shortly afterwards an amendment added some types of support for agriculture to this list. Therefore, in principle, the vast majority of central-government support schemes involving geographic criteria now operate under the same boundary system. Four selection criteria were applied in determining the new NPAs. Two criteria define geographic areas of security and strategic interest, some of which are beyond the scope of OECD analysis, while the remaining two comprise:

- Localities based on an index combining social-economic characteristics and a measure of spatial "distance" from Tel Aviv was used to score sub-districts with those receiving the lowest scores being classified as NPAs (up to a coverage of 25% of the population). Predictably, these NPAs are found in northern and southern areas with a high proportion of Arab communities.
- "New localities", which are included on the grounds that when communities are first established, their inhabitants contend with issues of bureaucracy, unfinished infrastructure and economic burdens that stem from a small population size.

Affordable housing schemes are underway

In July 2011 the central government announced two plans for affordable housing, involving more indirect support mechanisms than regular housing support. One scheme aims to encourage the expansion of rental accommodation. The plan is to release land for property development with tender conditions that a certain share of the apartments (probably between 20 and 40%) are rented out on a long-term basis. These property developments will (unlike regular releases) not be subject to a minimum tender offer. The authorities would retain control over who is offered this type of accommodation, but the eligibility conditions have yet to be decided. The Trajtenberg Committee (see Assessment and recommendations) recommended allocating these dwellings to ensure that they are available only to households with wage earners and not to existing homeowners or those with incomes in the top four deciles. The Committee also recommended some additional

Figure 1.11. **Examples of mortgages available under the general mortgage assistance scheme**



Source: OECD calculation based on data from the Ministry of Construction and Housing, Senior Deputy Director General's Office for Housing Assistance.

StatLink http://dx.doi.org/10.1787/888932538662

steps to encourage rentals; for instance it recommended tax breaks to institutional funds (or other financial entities) for investment in rental property.

The other central-government affordable-housing scheme aims to use an existing reverse-auction process to provide low-cost housing for home buyers. Since 1994, several thousand housing units marketed by the ILA each year have been released using a tender process in which the leasehold price of land is set in advance (usually the tenders are awarded on the basis of the leasehold price). Those tendering for the contracts (*i.e.* property developers) then compete on the sale price of the completed dwellings. In the past, the leasehold price has been set according to an assessment of the market price. It has been proposed to discount the leasehold price by 50% (up to a maximum of NIS 150 000 per unit).

In addition, some large municipalities, in particular Tel Aviv and Jerusalem, have independently elaborated plans for affordable housing (for rent but also for purchase), but these initiatives have encountered a legal barrier that is yet to be resolved.

Box 1.3. **Recommendations for improving economic policy in the housing market**

Housing construction

- Pare back central-government's role in property development. Pursue plans to decentralise planning through permanent reforms to the ILA and planning processes. However, do not excessively override planning and consultation processes.
- Allow more dwelling leaseholders to convert to full legal ownership.

House purchase, household finances during ownership and the sale of property

- Counter evasive action by banks that circumvents and dilutes mortgage regulation.
- Prune exemptions from capital gains taxation on property sales and rental income received by private households.
- Consider making greater use of property taxation (Arnona).

Box 1.3. **Recommendations for improving economic policy in the housing market** *(cont.)*

Housing support

- In broad terms aim for a simpler and more transparent system of housing support. In addition:
  - Ensure rent support dovetails with other aspects of the tax-benefit system for low income households. Consider raising rent subsidies as part of wider efforts to reduce poverty. Reconsider the provision of universal rent support to recent immigrants.
  - Make eligibility for social housing more uniform across households. Do not grant points for siblings in the points system.
  - Scale back support for home purchase, for instance by introducing income criteria for access to general mortgage support.
- Introduce modest minimum criteria in rental contracts such that both landlords and tenants are more assured of their rights and responsibilities.

Notes

1. Government directly supplied housing and provided various incentives for private-sector construction. For instance, bonuses were awarded for construction within a certain time, and land leases were sold at discount prices. See Alterman (2002b) for further detail.
2. Benchetrit and Czamanski (2009) present data on housing transactions in the Haifa region in a paper on immigration, home ownership and the role of mortgage subsidies in the 1990s. The data show that deflated prices of property bought using the subsidised mortgages rose more rapidly in the early 1990s than those purchased with regular mortgages. This implies that to some extent the mortgage subsidy was shared between immigrants, property developers and existing homeowners. The boost to prices in the mortgage-subsidy segment was short lived and was followed by a significant fall in prices in real terms while the remainder of the market remained relatively stable.
3. Jewish and Arab communities can usually be identified by the colour of rooftop water tanks. In Jewish communities the tanks are generally either white or silver, while in Arab areas the tanks are typically black.
4. For an international comparison of how the income tax and capital gains tax aspects of housing are treated see Cheung (2011). According to these data 13 OECD countries do not account for imputed rents and have tax relief on mortgage interest.

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ANNEX 1.A1

Additional details on housing support

Additional details on the general mortgage assistance scheme

Size of mortgage available

Points	Size of 25/28-year mortgage loan (4%)
Up to 1 399	62 400
1 400-1 499	74 350
1 500-1 599	85 250
1 600-1 699	96 190
1 700-1 799	107 090
1 800-1 899	117 985
1 900-1 999	128 930
2 000-2 099	139 825
2 100-2 199	150 720
2 200+	161 665

Source: Ministry of Construction and Housing, Senior Deputy Director General's Office for Housing Assistance.

Military service premia

Supplement of 1 percentage point on the mortgage loan for each month of military service with a maximum supplement of 60% per couple. Therefore, a couple who both complete regular military conscription (three years for men and two years for women) will typically qualify for the maximum supplement.

Supplements for mortgages on dwellings in the "periphery" (2011 values)

	Supplement to mortgage assistance
National Priority Area A	NIS 97 200 (half of this for individuals)
National Priority Area B	NIS 67 200 (half of this for individuals), but only in for high-density buildings (*i.e.* apartments)
"Confrontation line localities"	NIS 38 400 (toward the purchase of new dwellings)
"Confrontation line localities" in the north of Israel	NIS 38 400 plus NIS 9 500 grant (toward purchase of new dwellings, the additional grant is to cover the cost of secure space in the dwelling)
Negev localities	Ranges from NIS 48 000 to NIS 84 000 depending on location

Source: Ministry of Construction and Housing, Senior Deputy Director General's Office for Housing Assistance.

Programmes promoting the sale of public housing

Programme	"My Home"	"Buy Your Home"	"Here's My Home"	"An Apartment of My Own"
Period	February 1999-April 2000.	April 2000-December 2004.	April 2005-December 2009.	September 2008-December 2010.
Minimum occupancy of dwelling	5 years.	12 years.	4 years in National Priority Areas, 6 years elsewhere. From February 2007: 2 and 3 years, respectively.	5 years.
Parameters in setting discount	Longevity, number of persons in household.	Length of tenancy (3% discount for each year of occupancy).	Marital status and place of residence.	Length of tenancy, family composition, location, type of property.
Maximum possible discount	75% of market price, up to NIS 400 000.	90% of price up to NIS 600 000.	85% of price up to NIS 795 000 (92% from February 2007).	90% of price in NPAs, 82.5% elsewhere, up to NIS 705 000.
Mortgage-loan subsidy	5% fixed rate for 3 years.	4.5% fixed rate for 12 years.	Up to NIS 150 000 for 20 years at up to 5% interest.	Up to NIS 150 000 at up to 5% interest for 15 years.
Remarks	Supplemental rent in Priority Areas and distressed neighbourhoods.	Discounts reduced at end of 2003.	Rules of scheme revised in February 2007.	
No. of dwellings sold as of end September 2010	3 800	16 070	10 030	3 500

Source: Ministry of Construction and Housing, Information and Economic Analysis Division.

Chapter 2

Issues in private-sector finance

The 2008-09 global financial crisis did not result in the failure of any major financial institution in Israel, but it did reveal vulnerabilities in the non-banking sector – particularly in the corporate-bond market. Conservative regulation of the banking sector helped this segment avoid a financial meltdown, and low loan-to-value ratios in mortgage lending are undoubtedly helping limit the pace of house-price increases. Nevertheless, as elsewhere, capital requirements and stress tests for banks have been ramped up. Also the identification and monitoring of systemic risks and macro-prudential problems has intensified. In the Israeli context somewhat unusual issues arise from the control of most of Israel's major financial institutions by family-based business groups that have significant interests in non-financial sectors of the economy. This close link between the financial and non-financial sectors generates potential risks to financial stability, and it is a key issue in a wider debate about the relative merits of the business groups in terms of competition and control in the economy.

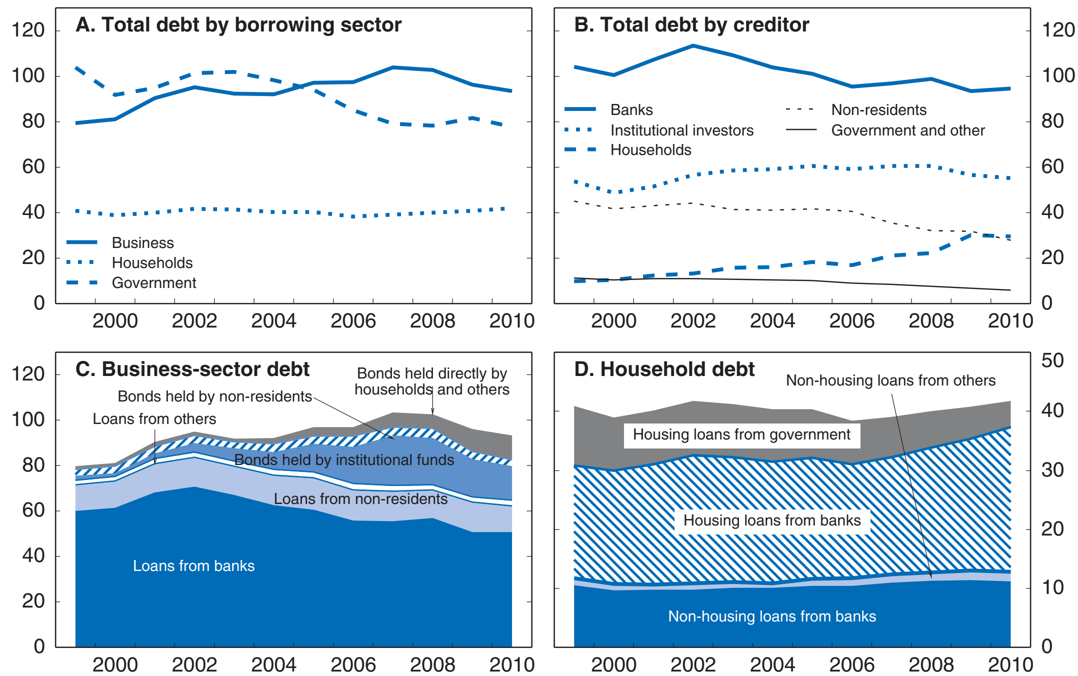
Private-sector finance, *i.e.* the process of intermediating between savings and investment by households and businesses, is core to market-based economies. Policies influencing primary lending and borrowing and the structure, conduct and performance of financial intermediaries affect the welfare of households, the growth and profitability of the business sector, and overall macroeconomic performance and stability. Although Israel's financial sector survived the 2008-09 global crisis without the collapse or rescue of any financial institutions, the credit crunch was nevertheless severe. Vulnerabilities were exposed during this episode, and the renewal of unusually turbulent conditions in global financial markets has generated fresh concerns, although Israeli banks and financial institutions are not believed to have significant direct exposure to troubled European sovereign debt.

Key developments

- As in many countries, the 2008-09 crisis has prompted reflection on the structure of financial supervision not only in terms of the oversight of particular institutions ("micro-prudential" oversight) but also whether scrutiny is sufficient from system-wide perspectives ("macro-prudential" oversight). Abstracting from the crisis, the task of supervising private-sector finance has anyway become more important and complex. Outstanding debt in the business sector is now larger than government debt (Figure 2.1, Panel A), and total debt held has shifted away from banks and non-residents towards that held directly by households and indirectly via institutional funds (Figure 2.1, Panel B).
- The rise in debt held directly by households and by institutional funds is largely in the form of corporate bonds, which have become increasingly important as a means of financing for the business sector since the early 2000s (Figure 2.1, Panel C). During the 2008-09 crisis the bond market dried up completely for a while, and a number of companies have restructured their debt. This has prompted tighter regulation of the market.
- In banking, prudential regulation has intensified in response to the 2008-09 crisis but also in reaction to the housing boom (see Chapter 1). By mid-2011, mortgage lending had reached NIS 220 billion, representing a 56% increase since 2007 and equivalent to 25% of GDP (Figure 2.1, Panel D).
- Many households are relying heavily on saving in institutional funds to provide income for retirement. Minimum mandatory contributions were introduced in 2008, and the contribution rates are being steadily increased. In 2010 it was agreed that the contributions should eventually reach 17.5% (by 2014), instead of the previous target of 15% (by 2013). This mandatory component is in addition to tax breaks on a range of institutional saving products.
- There has been a longstanding debate about concentration and competition in the financial sector. Successive reforms have diminished the dominance of banks, notably legislation that forced them to divest their institutional saving funds. But disquiet about the degree of competition in retail banking remains. Furthermore, most major banks and insurance

Figure 2.1. **Outstanding debt from various perspectives**

As a percentage of GDP



Source: Bank of Israel.

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groups are controlled by large family-based company groups, which also have controlling interests in a wide range of non-financial activities. The presence of financial entities in the groups amplifies various concerns about the strategy and *modus operandi* of the groups.

Background[1]

Liberalisation and privatisation in the 1980s and 1990s

Until the mid-1980s there were far-reaching government interventions and controls over the financial sector, as there were for much of the economy. Most credit to the private sector was directed under government programmes, and foreign-capital controls were extensive. Banking groups held the vast majority of financial assets and engaged in a broad range of related activities. Echoing a number of severe economic problems in the 1980s, a collapse in bank shares prompted the nationalisation of most banks in 1983.[2] In parallel with wider economic reforms, the financial sector was then gradually liberalised and privatised. Reforms promoting the development of capital markets were implemented in 1993, and in 1995 changes to the pension regime and a deregulation of provident-fund investments gave institutional investors more flexibility in their portfolio allocations.[3]

The pension reform was particularly significant. Previously, household saving had been channelled into occupational defined-benefit pension funds run by trade unions. Despite subsidy via preferential-rate ("designated") government bonds, by the mid-1990s the funds had become financially unsustainable, and the 1995 reform froze membership and established defined-contribution funds ("New" pension funds) run by the financial sector. Various arrangements were made to put the "Old" pension funds on a stable financial footing, and they are now also managed by the financial sector.

Economy-wide privatisation during the 1990s prompted greater use of equity financing. In addition, with the lifting of restrictions on access to foreign capital many Israeli firms began to issue securities abroad. Most notably, the high-tech sector, which grew rapidly during the 1990s, began listing shares on foreign exchanges, especially the NASDAQ. As part of its wider privatisation policy, the government began divesting its bank shares, with controlling shareholdings largely ending up among Israel's large company groups.

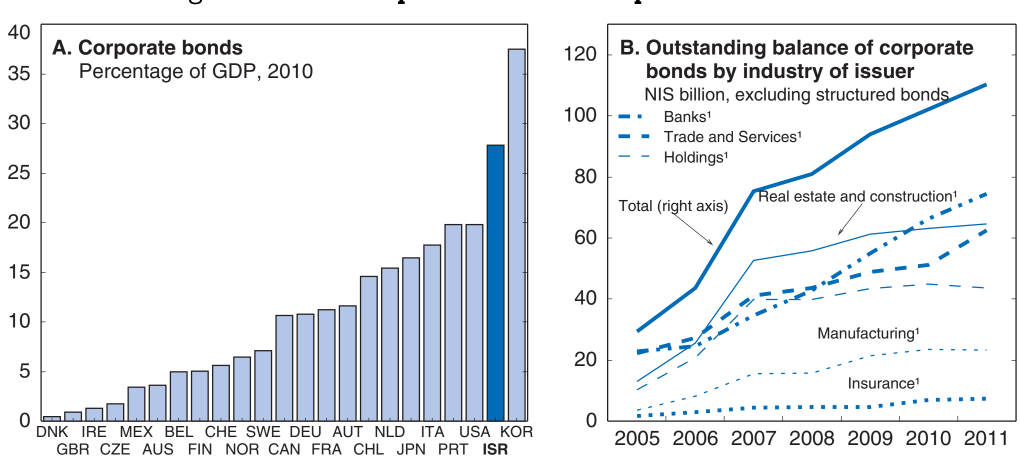
Efforts to reduced the scope of banks in the 1990s and 2000s

Following recommendations of the Brodet Committee, regulations limiting the ownership concentration of banks' capital were introduced in the mid-1990s. In the early 2000s another committee (the Bachar Committee) was established in light of concerns that banks were using their control over collective investment schemes (notably pension savings) to finance affiliated firms. As a result, in 2005 banks were forced to divest their interests in mutual and pension funds. Most of the funds were taken over by existing insurance groups. Therefore, although the Bachar reform successfully reduced the scope of banking-group operations, it did not significantly alter the line-up of principal players in financial markets. Also, it concentrated institutional savings because the insurance groups were already offering life-insurance packages with significant savings components. Other elements of the Bachar reform included rules preventing entities offering long-term savings products from also offering advisory services on what products to buy. The latter have remained the domain of the banking groups.

The shift towards non-bank credit since the early 2000s

The shift towards non-bank credit, and in particular corporate bonds, was prompted by a number of factors. Reluctance by banks to offer credit following the "dot.com" boom and bust cycle is thought to have been one factor driving businesses towards financing via corporate bonds. Slowdown in new government bond issues and further liberalisation of portfolio regulations for institutional funds in the early 2000s helped move further in this direction. Evidence shows that corporate-bond financing is more extensive in Israel than in most OECD countries (Figure 2.2). The bonds are used in a wide range of sectors, most notably in the financing of the real estate and construction sectors.

Figure 2.2. **The expansion of the corporate bond market**



1. Left axis.

Source: Bank of Israel (2010), *Annual Report*.

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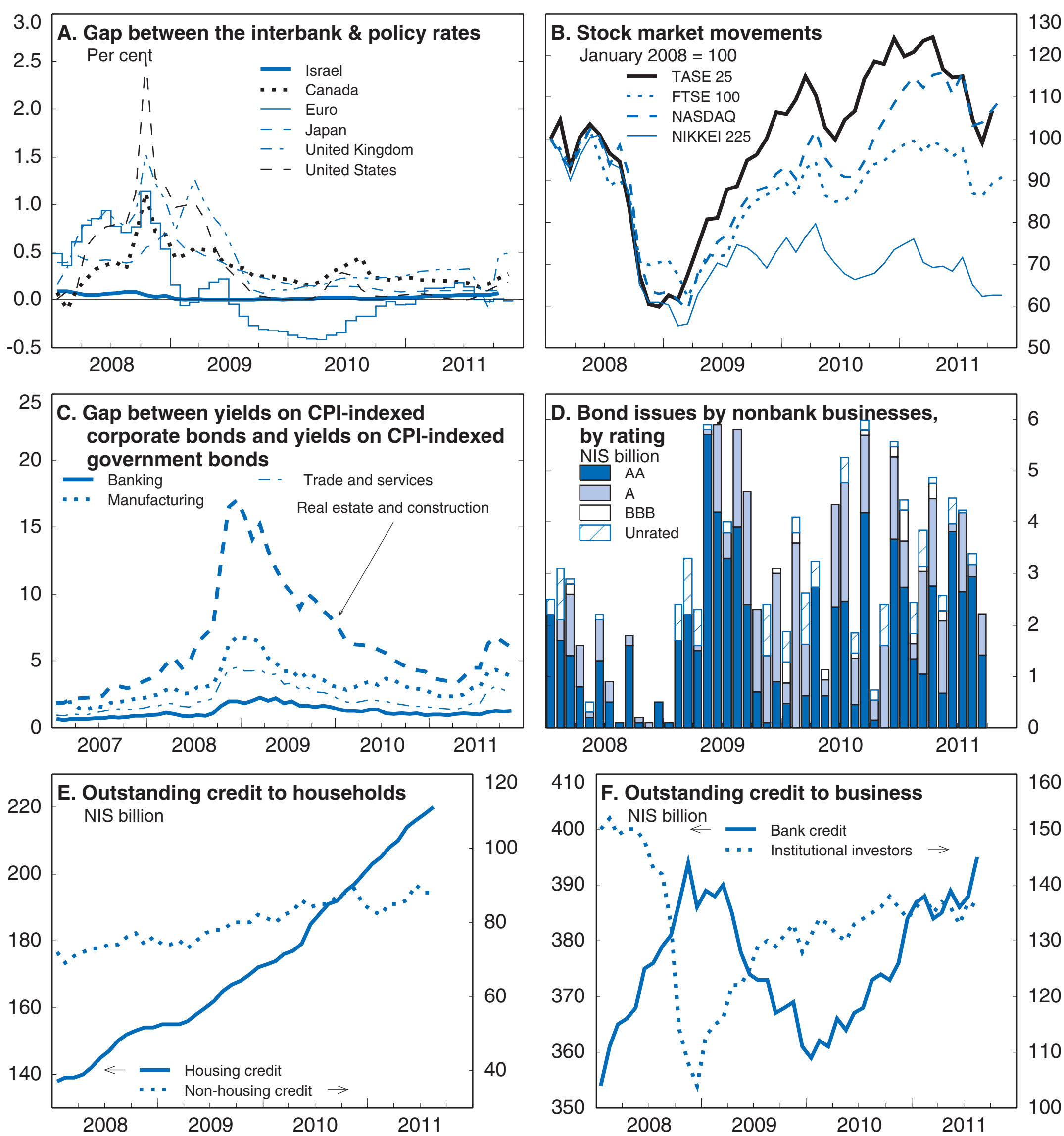
Developments during and since the 2008-09 crisis

Though less calamitous than in some other countries, the 2008-09 credit crunch was nevertheless significant. The banking sector did not experience a sharp rise in inter-bank rates (Figure 2.3, Panel A), but the stock market closely tracked the substantial fall in foreign indices (Panel B). Developments in the corporate-bond market prompted the greatest concern. Yields rose sharply in the secondary market (Panel C), especially for bonds issued by the real estate and construction sectors, and this contributed to a dramatic fall in new issues (Panel D). Indeed, between August 2008 and February 2009 new issues practically dried up completely. Furthermore, the number of firms entering debt-re-organisation procedures increased markedly in the wake of the crisis, although the value of the renegotiated debt was not a significant proportion of the total value of the corporate bond market.

Figure 2.3. **Developments in the financial sector since 2008**



Source: Central Bureau of Statistics, Bank of Israel and OECD.

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As an immediate monetary-policy response to the crisis, the Bank of Israel reduced its policy rate following the events of September 2008. The rate was lowered in several steps from 4.25%, reached 0.50% in March 2009 and was held at this level for several months thereafter. These steps were backed with purchases of government bonds in the secondary market to increase liquidity and enhance the impact of monetary-policy changes on longer maturities. This intervention ran from March to August 2009. Moreover, technical adjustments to the Bank's monetary operations sought to shift the liquidity mix towards longer-term holdings. In addition, the Bank increased and extended a pre-announced programme of daily foreign-currency purchases that began in the spring of 2008. This also operated until August 2009, and since then the Bank has been intervening on a discretionary basis.

The government stepped in with measures to support the corporate-bond market and to ease credit conditions for businesses in general (Box 2.1). These included the establishment of investment funds; guarantees to banks (none of these were called upon) and a temporary guarantee on the returns to second-pillar pension savings for savers close to retirement. Several additional steps were taken to support the non-financial business sector and help the unemployed, though these do not add up to a large fiscal stimulus (see previous *OECD Economic Survey*, OECD, 2010).

Box 2.1. **Temporary measures taken to support financial markets during the 2008-09 crisis**

Several measures aimed at directly supporting the corporate-bond market:

- Establishment of private investment funds partially supported with government capital ("Manof" funds). The government earmarked a contribution up to NIS 1.1 billion, and total funding was potentially NIS 4.5 billion. Three funds were created but were not utilised during the crisis.
- Suspension of mark-to-market rules for institutional investors up to a maximum of 3% of their assets and conditional on commitment to holding the bonds to maturity. A temporary tax exemption was granted on interest from corporate bonds for foreign investors as well as a reduction in the tax rate on dividends from abroad.

Other measures included:

- State-backed guarantees to banks from the Ministry of Finance to the value of NIS 6 billion (these were never called upon).
- Special provisions allowing small- and medium-sized enterprises to pay taxes in instalments and reduced guarantee requirements for businesses supplying government (the one-time value of this was estimated at NIS 0.8 billion).
- A savings guarantee ensuring that provident funds deliver a minimum real yield to policyholders aged 57 years equal to the real yield in the policyholder's portfolio as of end-November 2008 (these were never called upon).

For a while the financial markets appeared to be on track for a full recovery from the 2008-09 downturn, but renewed weakness has emerged in recent months. The main stock market index has fallen substantially in 2011 (Figure 2.3, Panel B), which probably reflects contagion from other markets. Rather more worrying is that yield differentials on corporate bonds have been edging up (Panel C), possibly reflecting financial difficulties among some issuers (notably business groups). Also, outstanding bank credit to businesses has levelled off (Panel F). This may partly reflect slowing exports but may also indicate dwindling confidence in the strength of domestic demand growth too. There is no sign as yet of a significant slowdown in the growth of total outstanding mortgage credit (Panel E), but given the signs of softening in the housing market in recent months (Chapter 1), this is likely to emerge in the coming months' data.

The structure of financial supervision and provisions for macro-prudential oversight

Financial supervision is carried out by three bodies with responsibilities divided along a more or less institutional basis. The Bank of Israel's Supervisor of Banks regulates and supervises banking activities, while the Ministry of Finance's Capital Market, Insurance and Savings Division (CMISD) regulates insurance, pension funds and provident funds. The Israeli Securities Authority (ISA) is responsible for mutual funds, securities firms, brokerages and investment advisers. General supervision over market structure and competition operates via the Israel Antitrust Authority. Key legislation pertaining to the structure, conduct and performance of the financial sector is listed in Annex 2.A1.

Although the 2008-09 crisis did not expose major deficiencies in supervision, it has prompted increased attention to micro- and macro-prudential oversight:

- Stress tests on banks are being improved with the introduction of additional scenarios and new techniques. For instance, a report by the supervisor (Bank of Israel, 2010) describes special tests on the stability of housing credit. Nevertheless, there is room for improvement. According to an IMF assessment, the tests need to draw on more detailed bank figures, make wider use of corporate and household balance-sheet data, involve closer collaboration with CMISD and be more strongly linked to macroeconomic forecasts (IMF, 2011).
- In broad terms macro-prudential regulation has been sound. The Bank of Israel hosted a conference in March 2011 devoted to discussing lessons from the crisis and prepared a detailed report on Israel's experience (Bank of Israel, 2011b). Furthermore, the policy responses to developments in the housing market (see Chapter 1) demonstrate an ability to co-ordinate reactions to specific issues. Ongoing development of legislation on rating agencies is being undertaken by the ISA.

Continued close attention is required, particularly to macro-prudential issues in light of the widening downside risks in recent months. Past and present shocks provide useful lessons in what ought to be monitored more stringently. However, oversight cannot be only reactive because future risks may well emerge from entirely different sources than in the past. Thus, the authorities need to ensure that the financial sector is monitored from multiple perspectives. It is now widely accepted that monitoring needs to extend beyond the examination of individual institutions, for instance, by examining the overall stability of the financial system and the structure, conduct and performance of the business sector as a whole. In this regard steps should be taken to ensure closer co-ordination and co-operation between the supervisory bodies. Regular monthly meetings of the supervisors have recently been held, but this may not be enough. Also, there are plans to publish a financial stability report, which would be useful as such reports can assure coherence in monitoring and policy messages. Various specific measures geared towards better macro- and micro-prudential supervision have also been taken.

There has been longstanding debate on the relative merits of the CMSID operating within the Ministry of Finance. Proponents of the *status quo* underscore that the CSMID is largely independent from the Ministry because special legislation governs its activities, and that progress in legislative and regulatory reform and effectiveness during times of crisis have benefited from close co-operation between the CMSID and the rest of the Ministry. This said, internationally, there has been tendency to reinforce independence by shifting supervision from ministerial control (not only in finance but also in other sectors) to bodies that are more clearly separate from government. As such, the arrangement in Israel would appear out of line with best practice. The Minister of Finance has significant powers regarding the appointment of the Commissioner of Insurance, and a range of issues require the Minister's approval. While it may be true that independence has not been compromised, the risk nevertheless remains in principle, and a model that more fully separates CMSID's activities from the Ministry should be sought that at the same time retains incentives for close co-operation.

Though the Bank of Israel has frequently argued that it should take over CMISD's activities, this is only one option. Wide central-bank responsibilities in supervision are a feature of some, but by no means all OECD countries. International debate on the structure of financial supervision, including in the wake of the 2008-09 crisis, has not yielded any particular consensus on this topic, and a definitive ranking of institutional frameworks is unlikely to emerge because their relative merits depend heavily on country-specific aspects of financial systems and regulatory structures. It seems that the quality of supervision depends more on the strengths of the supervisors, rather than any specific institutional arrangement. In any event, whatever decision is made, continued close co-operation among supervisors will remain of key importance.

In banking, institutional and regulatory settings are well positioned to cope with challenges

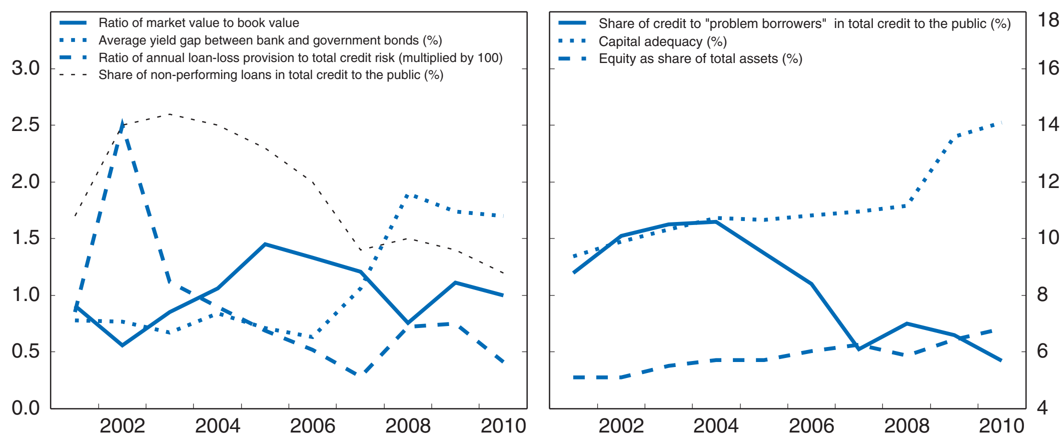
Conservative commercial banking, particularly in terms of lending to households and businesses, meant an absence of significant over-extension of domestic credit during the run up to the 2008-09 crisis. Partly for this reason, a housing-market bubble did not emerge in the 2000s as it did in some other OECD countries (rather, house prices have risen substantially since 2008; see Chapter 1). In addition, exposure to toxic foreign credit was limited. Nevertheless, the crisis has prompted some reform and raised the question of how to proceed with further financial liberalisation.

Capital provisions are in good shape

Good progress has been made in capital provisioning, and, in general, indicators suggest that the banking sector is sound. The Basel II guidelines had been fully adopted by the end of 2009 (Bank of Israel, 2010). Satisfying the minimum capital requirements and other guidelines has involved action on a number of fronts, including upgrading of risk-management frameworks, auditing and corporate governance. The Supervisor has set a 12% overall capital-adequacy ratio, and the minimum core capital ratio was raised to 7.5% in 2010. Furthermore, a timetable for increases in the latter has been set as part of the adoption of Basel III guidelines. Other measures underway include adoption of the International Financial Reporting Standards and the Financial Stability Board's principles of compensation practices.

According to the latest data the industry-wide average capital-adequacy ratio is 14%, well above the target, and other indicators point to favourable risk and capital-adequacy conditions (Figure 2.4). The Bank of Israel has investigated the merits of introducing a counter-cyclical minimum capital ratio (*i.e.* higher during booms and lower during recessions) as suggested in the Basel III regulatory standards. However, research by the Bank concludes that during downturns Israeli banks are more constrained by increased borrower risk than a shortage of capital, implying that counter-cyclical capital ratios may not be very effective (Bank of Israel, 2011a).

Figure 2.4. **Indicators of risk and capital adequacy in the banking sector**



Source: Bank of Israel.

StatLink http://dx.doi.org/10.1787/888932538738

Securitisation of mortgages should proceed with care

Various longstanding features of Israeli's banking legislation and regulation helped to avoid failure of any systematically important financial institutions in the 2008-09 crisis. In particular, regulated loan-loss provisions for mortgage loans, which result in low loan-to-value ratios have proved to be an effective tool. These provisions almost certainly helped to prevent a housing bubble similar to that in some other OECD economies. And the requirements have undoubtedly tempered the more recent rapid increase in house prices. Indeed, the provisions have been used actively to cool down the market. However, as mentioned in Chapter 1, the authorities should act quickly in the event of evasive action by banks that circumvents and dilutes the impact of tighter regulation of mortgage lending. Given recent housing-market developments, macro-prudential measures in the opposite direction may be required to prevent a hard landing.

In light of the positive dimensions of conservative mortgage lending and international experience, facilitating the transfer of credit risk through securitisation should proceed with caution. To date, while securitisation is not barred in Israel, the legal framework and tax treatment means it is costly and cumbersome, and therefore has not been widespread. However there are plans for this to change. Proposals are being developed for securitisation under certain conditions, including "true sale" (*i.e.* investors will have a legal right over the receivables) plus requirements for the originator to retain a minimum share of the securitised product (possibly 10%). In addition, procedures would be simplified and biases in tax law removed.

Other issues

The 2008-09 crisis revealed some weaknesses in mechanisms dealing with banks in difficulty, and these should be confronted. The current legislation dates back to 1969 and is insufficiently clear on some points and out of date on others. Specifically, the Bank of Israel (2011b) recommends strengthening the powers of the Governor and the Supervisor of Banks for early intervention when a bank's stability comes under threat. In addition, it recommends provisions to override legal public disclosure requirements when banks are in difficulty, so as to facilitate discrete rescues, thereby lowering the risk of panic among markets and the public at large. The report also recommends clearer rules regarding the collateral that the Bank of Israel could accept in order to secure credit.

As elsewhere, the 2008-09 crisis prompted concerns that compensation structures for personnel in the financial sector were amplifying principal-agent problems. In the banking sector, new rules were introduced in April 2009 requiring compensation to be based, *inter alia*, on long-term profitability.

Vulnerabilities in the corporate-bond market and related issues for institutional funds

The sources of trouble in the corporate-bond market

The 2008-09 crisis underscored various weaknesses in the corporate-bond market, *inter alia*:

- Thin trading volumes. Despite growth of the market, liquidity and trading volume for any given bond is typically thin. Hence, market prices can be volatile and an inaccurate guide for traders and investors. During the downturn this added to difficulties in launching new issues.
- Deficient information flows in the process of bond issuance and in criteria that help classify the riskiness of bonds. In particular, an absence of instruments that safeguard the credit status of bonds contributed to a loss of confidence in the market during the crisis. In Israel the bond contract (the "indenture") rarely includes clauses to protect the bondholder through the sort of covenants and financial criteria that are common in more mature corporate-bond markets.[4]
- Lack of orderly debt-arrangement processes. Where doubt about debt repayment does arise, the procedures bondholders (notably institutional investors) should follow in order to secure their rights lack clarity.[5]

Little can be done by policymakers to combat problems generated by thin liquidity and trading volumes. As regards the other difficulties, the crisis has probably prompted greater awareness of risk among bond purchasers. Indeed, according to the latest *Annual Report* of the Bank of Israel (Bank of Israel, 2011a), with the exception of mutual funds, institutional funds' holdings of corporate bonds have been scaled back. However, as the 2008-09 global financial crisis showed, "self-regulation" should not be counted on too heavily. Accordingly, the authorities have introduced various regulatory reforms.

Steps taken so far

The corporate-bond market is governed by the Securities Law (see Annex 2.A1). As such, the legislation and related guidelines cover tradable bond issues (*i.e.* bonds that are offered to the public under a prospectus and that are traded on the stock exchange) and non-tradable bond issues (*i.e.* bonds offered only to selected entities, typically institutional investors) offered by public companies listed on the stock exchange. Therefore, non-tradable bonds issued by private companies (referred to in Israeli documentation as "bonds issued by a non-reporting corporation") are not covered by the Securities Law and until recently were not subject to any guidelines or regulation.

The authorities have tightened regulations on institutional investors acquiring corporate bonds, in part to gain policy leverage on bond issues by non-reporting corporations. In the immediate aftermath of the 2008-09 crisis the CMISD tightened various rules and added new provisions; for instance, these institutions have now been required to appoint a risk manager. Further steps were taken following the recommendations of the Hodek Committee (2009). These comprise guidelines on best practices and a number of mandatory measures pertaining to institutional investors:

- preparatory analysis when purchasing in the primary market;
- approval by the institution's investment committee in the case of bond purchases above a certain threshold;
- registration of non-tradable bonds in a newly established registration bureau;
- receipt of specific documentation from the issuer prior to primary investment;
- requirement that purchases from non-reporting corporations furnish an "offering memorandum" (equivalent to a prospectus) and a commitment from the issuer to provide purchasers with information during the lifespan of the bond;
- minimum (and recommended) contractual covenants and financial criteria and the use of contractual templates; and
- classification of corporate-bond investments and the setting of explicit criteria by the institution's investment committee on the size and composition of investment in corporate bonds.

Steps have also been taken to improve the conduct of companies issuing bonds. Measures taken by the ISA include new reporting requirements. In addition, legislation is in the pipeline to increase the responsibility of bond trustees and improve the corporate governance of companies issuing bonds to the public. Furthermore, new legislation that will increase transparency and formalise the activities of the rating agencies is in train. Efforts to improve debt-arrangement (*i.e.* restructuring) processes were also made. The ISA proposed a blueprint for procedures to restructure corporate bonds, and a legal framework was created to allow the appointment of credit officers to assist in restructuring tradable debt.

Given the difficulties in anticipating the effectiveness of tighter regulation, these steps should be closely monitored. A more hands-on approach using more direct regulation should be used if weaknesses in the bond market persist. Experience following implementation may reveal, for instance, that some provisions provide little useful information to the market and merely add to back-office paperwork. Others may prove particularly effective and could be usefully beefed up. In the case of the Hodek recommendations, recognition that fine-tuning will probably be required was to some extent recognised; for instance, it recommended that the rules requiring the receipt of specific documentation be reviewed after 12 months. However, no commitment for a comprehensive monitoring and follow-up of the measures has been made.

In addition, regulations on bond purchasers should apply more uniformly, as the application of new rules only to institutional funds for long-term savings has caused some concern. The Hodek measures have already had some impact. Samples of bond issues reveal that in 2010 about 40% included contractual covenants or requirements to meet financial criteria, compared with 28% in 2009 (Bank of Israel, 2011a). However, the new regulations risk splitting the market, one segment comprising relatively "safe" bonds that comply with the Hodek reforms and held largely by institutional funds, and the other non-compliant bonds held by short-term investors (mutual funds in particular). Such a division could lead to problems if trading becomes thinner and the holders of any particular issue less diversified.

Specific concerns relating to the use of uncollateralised corporate-bond financing in the real-estate sector may remain. In principle, this practice may diminish in some segments of the real-estate sector with the planned introduction of facilities for mortgage securitisation. However, other segments, such as those investing in foreign real estate (activity by Israeli companies in Eastern Europe has become prominent), may continue to rely on uncollateralised bond issues.

Other issues for the non-banking sector

The measures described above deal with only the one leg of the connection between primary borrower and lender: the relationship between the issuers and the institutional fund managers. The relationship between the fund managers and policy holders (*i.e.* the public) may be dysfunctional due to asymmetries in information and differences in priorities. For instance, even if the corporate-bond market works well, the scale and composition of such bonds in institutional portfolios may anyway be inappropriate. In an effort to combat such concerns, and similar to the banking sector, CMISD has introduced regulations requiring institutional funds to adopt compensation packages for their staff based on long-term performance. In addition, default investment tracks for long-term saving are planned (see the following section), which may also alleviate some principal-agent problems.

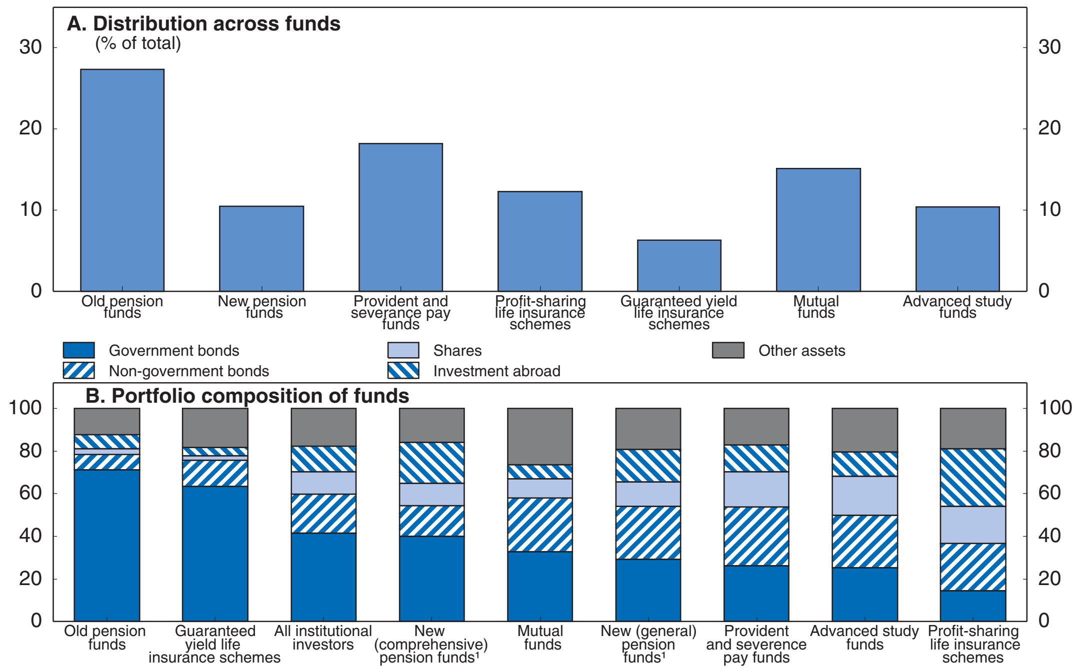
Capital adequacy and risk management in insurance groups is being improved through the introduction of regulations echoing those of the EU's Solvency II directive by January 2013. According to Bank of Israel (2011a), the capital ratios of the five largest insurance companies were already in line with these regulations by the end of 2010. However, the Bank has expressed concern that its facilities for providing liquidity to the non-bank sector in the event of a crisis are not fully developed. Although the new Bank of Israel Law provides a legal framework for such intervention, details for an operable system need to be fleshed out.

Room for improving households' incentives and choices for saving in institutional funds

Households' institutional savings comprise six types of product, four of which are for long-term savings. As mentioned earlier, pension reform in 1995 resulted in two types of pension fund: "Old" (defined-benefit) and "New" (defined-contribution). In addition, tax breaks are provided for two other types of long-term savings: "provident funds" and life-insurance products. Finally, there are two short-term savings vehicles: mutual funds and "advanced training funds" (Kranot Hishalmut). Old pension funds account for the largest share of institutional savings (Figure 2.5) but are being run down; the role of the New pension funds, which currently account for less than 10% of institutional savings, will steadily grow (see below). Insurance products in total account for just under 20% of institutional savings, and a similar share goes to provident and severance-pay funds. For further detail on the private pension system see OECD (2011b).

Figure 2.5. **Distribution and portfolio composition of institutional funds**

2010



1. "New (comprehensive) pension funds" include an insurance component while "New (general) pension funds" do not.

Source: Bank of Israel (2011), *Annual Report 2010*.

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Examination of portfolio composition underscores the significant shift in the type of bond holdings in institutional saving. Government bonds are a significant share of the portfolios of Old pension-fund portfolios (73% in 2009) and of guaranteed-yield life insurance, in both cases reflecting a need for low-risk returns. However, government bonds are used far less in the other types of institutional funds, and these funds are gaining market share. For example, in 2009 only 35% of new (general) pension funds were invested in government bonds (30% of these funds have to be invested in designated government bonds), while 26% were invested in corporate bonds. Furthermore, government bonds accounted for only 16% of profit-sharing life insurance in 2009, with corporate bonds at 26%.

Regarding short-term savings, mutual funds do not benefit from any special tax breaks, but the advanced training funds (Kranot Hishalmut) do. Savings in these funds benefit from tax credits and, despite the name, can be spent on a wide range of goods and services. Tax breaks on short-term savings are hard to justify on economic grounds, as they bias the consumption/saving decision, distorting the allocation of resources. Hence, the tax breaks on savings in these funds should be phased out.

The four types of long-term savings form the "second pillar" of the pension system. Provisions from first-pillar pensions are modest, and so many households rely heavily on the proceeds from long-term savings for retirement income. All four types of savings benefit from a common set of tax breaks in contributions, fund returns and pension (or annuity) payouts (Table 2.1). In 2008 an agreement between employer representatives and trade unions introduced mandatory minimum contributions for defined-contribution schemes for

Table 2.1. **Contribution regulations and tax treatment of second-pillar pension savings**

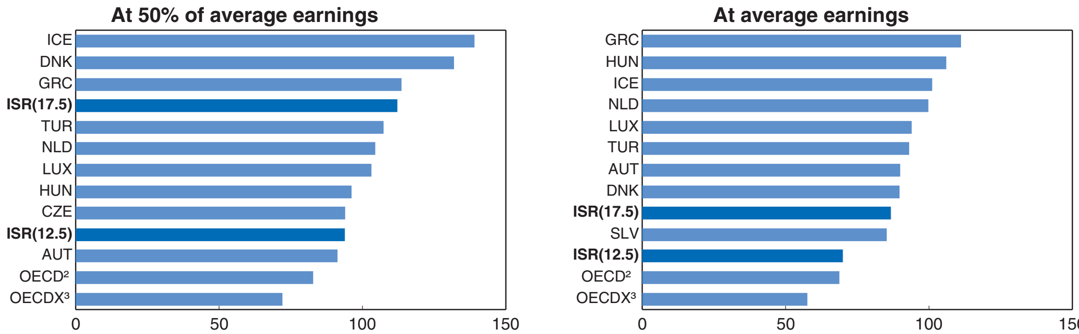
Contributions	• Mandatory minimum contributions to the new pension funds were introduced in 2008 and apply to employees' earnings up to the average gross wage. Initially the total contribution rate was 2.5% but is undergoing stepped increases and will reach 17.5% (7.5% from employees and 10% from employers) by 2014. Five percentage points of the employers' contribution also serves as severance insurance. The legal maximum contribution rate is 22.8%: 7% for employees, 15.83% for employers (7.5% pension and 8.33% severance insurance).
Tax treatment	• Favourable tax treatment for pensions, provident funds and life-insurance products not only applies to "regular" pension products but also to saving via life-insurance and provident fund products. The tax treatment was equalised across savings products in 2008. • Employer contributions are not counted in employees' taxable income (with a ceiling). • Employee contributions are subject to a 35% (wasteable) tax deduction (with a ceiling). • Returns on pension saving are not taxed. • Payouts (annuities) are taxed according to regular income-tax rules except there is: *a*) a tax credit of 35% on the annuity (with a ceiling equal to about 30% of the average wage); and, *b*) an additional "credit point" (worth NIS 197 per month in 2009 against tax due) if one's spouse does not work and has no pension.
Other dimensions	• Tax incentives generally guide policyholders' decisions on when to retire. For example, following a 2008 reform tax exemptions on provident-fund savings apply only if the fund is held until age 60 or above (previously they applied after the fund was held for 15 years). • Pensioners must redeem their pension on a monthly annuitised basis (and not, for example, make capital withdrawals), unless the person has separate monthly income of at least NIS 4 000 (*i.e.* about 60% of the average wage). • Portability provisions for switches between pension plans were introduced in 2008 (in the past unions or employers often chose the savings vehicle).

all employees. Initially, the contribution rate was set at 2.5%, and in the original agreement it was scheduled to reach 15% by 2013 (5% as the employees' contribution and 10% from employers). It is estimated that between 2008 and 2010 the agreement prompted about 730 000 workers, the vast majority on low wages, to join pension funds. In addition, contributions from many of those with policies set up prior to 2008 will have been increasing as a result of the agreement. The agreement is somewhat unusual in that it did not include exemptions for older workers. Typically, in introducing, or increasing, mandatory contributions, those close to retirement age are exempted because of concerns about risk on market returns from a short contribution period and disproportionate overheads in management fees. This aspect of the system should be monitored.

In 2010 unions and employers agreed to raise the mandatory pension contribution rate to 17.5% by 2014. OECD simulations show a contribution of this magnitude implies a relatively high net pension replacement rate at low earnings levels compared with similar calculations for other countries (Figure 2.6). Indeed, the net replacement rate is 112% at half of average earnings, which implies that perhaps too much saving is being mandated. However, there are some caveats. First, five percentage points of the contribution can be used as severance pay in the event of redundancy, which, if fully utilised, implies a pension contribution of 12.5% and a replacement rate of 94%. In addition, low earning households are likely to accumulate fewer contribution years than were assumed in the replacement rate calculations (which assumed full-time careers starting at age 20). Furthermore, existing laws and regulations do not precisely define which components of salary should be included in the calculation of the pension contribution. In particular, this means there is considerable variation, depending on the specific working agreement, whether overtime and allowances are included in the base. Nevertheless, the replacement rate would seem to be ample, and therefore no further increases in the minimum contribution rates are warranted. It should also be noted that research indicates that the introduction of mandatory pension saving is imposing a net fiscal cost. This is because revenue losses from tax credits on the additional contributions outweigh the savings in income-support payouts to pensioners.[6]

Figure 2.6. **International comparison of simulated net pension replacement rates by earnings levels,[1] men**

Highest ten OECD countries and Israel, including second-pillar pensions



1. The simulation assumes individuals starting full-time careers at age 20.
2. Unweighted average.
3. OECD average excluding highest 10.

Source: OECD, from OECD pension models.

StatLink http://dx.doi.org/10.1787/888932538776

Reforms in the tax treatment of pensions are planned; this is welcome in principle, though details have yet to be made public. The mandatory contributions were introduced without any alteration to the tax benefits, and thus employees continue to receive tax breaks on the mandatory component, which is somewhat wasteful from a policy perspective. In any case, the incentives are regressive, at least for low- to middle-income earners. Indeed, the breaks on contributions are of practically no value for low-income households because other credits cut their tax bills to zero or close to it. A similar argument applies to the tax concessions on pension payouts. The 2010 *Survey* also recommended making the tax credits non-wasteable so as to boost lifetime returns to defined-contribution pensions for those on low incomes, and removing special tax credits on pension payouts, once again on the grounds that these largely benefit only middle- and upper-income earners.

Plans for "life-cycle" portfolio adjustment are welcome. Similar to developments in some other OECD countries, proposals are being developed that define a limited number of pension portfolios with different risk characteristics. Institutional funds will be obliged to offer (at least some) products according to these templates, and workers will be encouraged to choose among these options and to shift from high- to low-risk variants as they get older (a default sequence will also be proposed). These provisions will potentially not only protect households but also reduce the risk of moral hazard by institutional funds taking excessive risk on the assumption that the state is likely to support those most affected in the event of poor returns (*i.e.* those close to retirement). In the process of introducing life-cycle adjustment, consideration should be given to removing regulations giving old and new (comprehensive) pensions access to preferential-rate government bonds (indeed these funds must invest a minimum of 30% in such bonds), so as to reduce distortions in portfolio choice and put long-term savings products on a more equal footing.

The life-cycle plans will help simplify pension products, but additional streamlining would be helpful. The Israeli pension system offers scope for wide product differentiation, so that many households are probably not making well informed choices. Efforts to improve financial education will help somewhat but should be coupled with clarification and simplification of the pension products themselves. At present, even choosing between the basic product types involves fairly sophisticated assessment (although there is a default pension plan, which, as long as it reasonably approximates the preferences of those who do not want to make an active decision, helps in this regard). Table 2.2 illustrates how insurance criteria, rules on one-time deposits, contribution caps and rules on designated government bonds vary across the different categories of long-term saving products. In addition, wide variations are possible within each category (for instance, regarding the details of insurance components).

Table 2.2. **Selected characteristics of long-term savings products**

Common characteristics	● Choice is possible between lump-sum and annuity withdrawal with the provision that the policyholder has arranged a minimum monthly income in retirement (as per Table 2.1).
New "comprehensive" pension funds	● Must include insurance for disability and death. ● One-time deposits precluded. ● Insured salary is capped at twice the gross average wage. ● Portfolio must contain at least 30% "designated" government bonds.
New "general" pension funds	● Not required to include insurance for disability or death. ● One-time deposits allowed. ● No cap on the insured salary. ● Portfolio cannot contain "designated" government bonds.
Provident fund	● No insurance component is allowed (as part of a recent proposal for pension reforms the Ministry of Finance is recommending this be lifted). ● Tax benefits apply only after 15 years and if the policy holder is at least 60 years old. ● One-time deposits allowed. ● Portfolio cannot contain "designated" government bonds.
Life insurance policies (with savings component)	● Usually include life insurance and may also include other insurance. ● One-time deposits allowed. ● Portfolio cannot contain "designated" government bonds.

Competition and corporate-governance issues

Despite various measures, notably the Bachar reform (see above), disquiet about the degree of competition in the financial sector remains. There are essentially two dimensions to these concerns. The first is fairly straightforward: that financial intermediaries may be colluding in the design and parameter settings of retail financial products. The second concern relates to the fact that most financial institutions are controlled by Israeli business groups with significant interests in non-financial sectors (see Tables 2.3 and 2.4). In broad terms this may be contributing significantly to excessive power and influence of these groups, and of the individuals that control them.

Competition in retail products

Good progress has been made regarding retail bank fees, which have long been a target of complaint by the public. Indeed, private members' bills proposing direct regulation of the level of bank fees have periodically surfaced in the Knesset, though none have made it onto the statute books, which is welcome. The authorities have instead aimed to increase transparency, and a number of steps in this direction were taken by the Supervisor of Banks in 2008. These included a reduction in the number of fees, harmonisation of their definition and the introduction of more stringent disclosure requirements. The latest assessment of fees since the rule changes (Bank of Israel, 2011a) suggests progress has been made: for instance, the report found that fees on current-account services have fallen by 13% on average in real terms and fees on credit cards by more than 20%. In addition, it concluded that promotional campaigns have become more common, which also indicates banks are competing more vigorously. Moreover, the 2008 reform has been followed up by

Table 2.3. **Five largest banking groups**

Banking group	Key shareholders (as of October 2011)	Share of total banking assets (September 2010) (%)
Bank Leumi Group	Controlled by the State with a minority stake (6.03%). Other key shareholders: businessman Shlomo Eliyahu with holdings of 9.59%.	29.7
Bank Hapoalim Group	Controlled by Arison Holdings with a minority stake (20.22%). Arison Holdings is an Israeli company group owned by the businesswoman Shari Arison. Other key shareholders: Delek group (6.14%).	27.1
Israel Discount Bank	Controlled by Treetops Acquisition Group Ltd. (26.16%), which is controlled by businessman Matthew Bronfman who, for instance, also controls a large Israeli supermarket chain (Supersol).	16.8
Mizrahi Tefahot Bank Group	Controlled by the Ofer and Wertheim company groups, with a majority stake (42.01%). The Ofer family controls one of Israel's largest business groups (Israel Corporation). Wertheim is also a business group. Other key shareholders: Leen Holdings (5.72%).	11.3
First International Bank Group	Controlled by FIBI holdings (53.53%) which majority is owned by Israeli businessman Zadik Bino. Other key shareholders: Israel Discount Bank (26.49%).	8.7
Total		**93.6**

Source: TASE, Shares in total assets from Bank of Israel (2010), information on key shareholders from various sources.

Table 2.4. **Six largest insurance groups**

Insurance Group	Key shareholders (as of October 2011)	Share of total long-term savings assets (%) (December 2009)
Migdal	Controlled by the Italian insurance company, Assicurazioni Generali S.p.A. with a majority shareholding (69.13%). Other key shareholders: Bank Leumi (9.79%).	16.80
Clal	Controlled by the IDB Holding Corporation (54.97%), an Israeli company group headed by businessman Nochi Dankner. Other key shareholders: Bank Hapoalim (9.51%).	14.76
Menora-Mivtachim	Controlled by Palmas Establish (30.93%) and Naiden Establish (30.93%). Other key shareholders: Kalman Aharon (2.72%).	10.66
Psagot	Controlled by Apax Partners, a London-based private equity company.	9.68
Harel	Controlled by an Israeli family (the Hambergers) through G.Y.N. Financial Consulting and Management Ltd. (49.35%).	8.99
Phoenix and Excellence	Controlled by the Delek group, an Israeli company group headed by Isaac Tshuva (56.98%). Other key shareholders: Mayer's Cars and Trucks Co. Ltd. (1.93%).	8.44
Total		**69.3**

Source: TASE, Share of long-term savings assets from Annual Report of the CMISD.

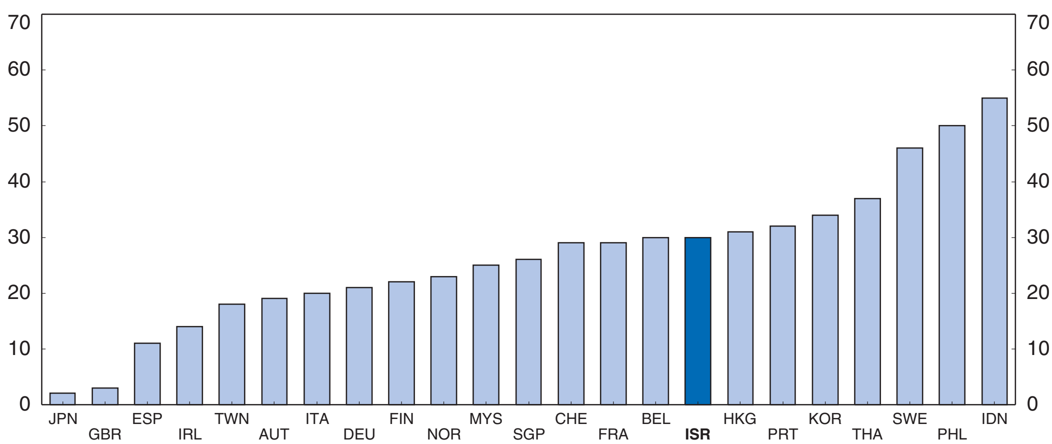
further steps: in December 2010 regulatory amendments were made to facilitate switching from one credit-card issuer to another, and legislation endeavouring to further promote competition in the credit-card market was passed in 2011.[7]

Reforms to fees charged by institutional saving funds have also been proposed. In 2010 a report was submitted to the Knesset that found significant increases in the annual management fees of provident and pension funds since these were transferred from banks to insurance companies. In response, the CMISD has proposed various changes. Notably, annual management fees on provident funds and unit-linked products would be capped at 1.2% of accumulated assets and 5% on contributions, while those on New pension funds will remain at 2% of assets and 6% of contributions. Management companies will be allowed to change their fees only once every two years.

The role of financial institutions in the debate about "business groups"

Debate about the merits of Israel's business groups has intensified in recent years. In part this has been prompted by empirical results underscoring what many had suspected: that controlling interests in the economy are unusually concentrated. In 2007 a paper published by a researcher at the Bank of Israel (Kosenko, 2007) used data for 650 firms listed on the Israeli stock exchange to investigate the concentration of ownership. This revealed that the 20 largest families (in terms of shareholdings) held about 30% of the total market value. International comparison with similar calculations for 22 other countries (of which 17 were OECD member states) indicated this figure to be reasonably high (Figure 2.7). In October 2010 a committee was established to examine concentration. The social protests of 2011 have given further impetus to the debate, with some (at least partially) blaming the groups for high prices of retail goods and services.

Figure 2.7. **The stock market share of the ten largest family/business groups**



Source: K. Kosenko (2007), "Evolution of Business Groups in Israel: their Impact at the Level of the Firm and the Economy", *Israel Economic Review*, Vol. 5, No. 2.

StatLink http://dx.doi.org/10.1787/888932538795

Israeli company groups have pyramidal control structures, and discrepancies between ownership and control rights can be large. In an extreme case, one group reportedly exerts full control at the bottom of the pyramid with only 3% of cash-flow rights (OECD, 2011c). The prevalence of pyramidal structures is in part due to limited use of voting-rights differentiation across share classes. Options for the latter were narrowed significantly by an amendment to the Securities Law in 1989, which largely stopped control-enhancing mechanisms, such as priority shares and voting-rights ceilings.[8] Preferred shares and shareholder agreements are permitted in principle but are not very widespread. Israel's company-group structures are similar to those of many countries in Europe and Asia, with parallels drawn in particular to Korean *chaebols* (OECD, 2011c).

Company groups raise two issues in relation to the financial sector. First, when these include financial institutions, the advantages and disadvantages of groups (Box 2.2) are potentially amplified. A financial institution inside the group probably facilitates positive financial intermediation but potentially provides more opportunities for appropriation and distortion in the allocation of resources. For instance, a study using Mexican data finds evidence that loans from a bank to other members of the group are less likely to be repaid and more likely to be granted at favourable interest rates (La Porta *et al.*, 2003).

Box 2.2. **Pros and cons of company groups**

The defining characteristic of company groups is common control, often by an individual or family, over public companies where their ownership is partial (*i.e.* there are non-controlling shareholders). Such groups are widespread in the world and notably distinct in character from the diversified shareholding model of the United States and United Kingdom (where company structures may also be complex and linked to a different set of corporate governance issues).

Affiliation of companies with business groups can offer various advantages over independent control and operation, principally because better information flows, reduced transactions costs and common identity allow interactions between companies that would otherwise not exist. Opportunities for financial intermediation may be expanded; for instance, groups can facilitate the establishment of small companies with high growth potential but difficulty in gaining access to capital. But the advantages may not be limited to financing and risk management. For example, groups can usefully deepen markets for specialised workers and managers.

Criticism of business groups draws attention to various agency problems. Controlling individuals or groups can exploit informational and other advantages to their own ends, to the detriment of other shareholders or to the general well-being of the affiliated companies and by extension the economy as a whole. As part of this process, critics underscore that business-group leaders are often able to entrench their positions through powerful business and political lobbying and that their (often complex) structure affords ample opportunities for appropriation.

Pyramidal structures attract specific attention because such nested ownership means the controlling interest's corporate reach can extend far beyond their financial stake. For instance, suppose a family owns a stake (say 51%) in the company at the top of the pyramid which itself holds similar stakes in a second tier of companies, and these hold stakes in a third tier, and so on. The family controls all the firms in the pyramid but has successively smaller financial commitments at each level. Commitment at the second level is 26% (0.51 squared, expressed as a percentage), 13% in the third level (0.51 cubed as a percentage), and so on.

Viewed positively, pyramids provide a means for entrepreneurs to expand their business without ceding control and for allowing others to participate in the returns. Minority shareholders may, for instance, hold the entrepreneur in high regard and see positive benefits to the business group along the lines described above. Conversely, pyramids may also serve as a powerful vehicle for unscrupulous controlling interests to expropriate rents from minority shareholders. For instance, because the controlling interest's financial stake increases higher up the pyramid, there are incentives to divert resources from companies at the bottom of the pyramid, possibly through transfer-pricing strategies. There is evidence that markets factor in such adverse behaviour; the price of a minority share is often much lower than a share in the controlling block (a "control premium").

Closely held and private companies are often included in company pyramids, providing additional means to transfer resources and obscure business dealings. This is regarded as a significant issue for Israeli business groups. Controlling interests in the group have greater leeway in appointing directors and management in such companies and can take advantage of lighter regulation in other respects, for example regarding the disclosure of information.

Second, company groups raise issues of prudence and systemic risk. The stability of financial entities may depend on the overall stability of the groups themselves. Furthermore, the group as a whole may pose a systemic financial risk, even if there is no bank or similar institution within the group. Indeed, during the disappearance of the bond market in 2008-09, concerns surfaced that one of the business groups might fail. In addition, for those groups controlling a bank, implicit deposit insurance may have acted as an insurance for the group as a whole, in much the same way that deposit insurance has, in effect, covered investment banking in countries where this can be conducted within the same institution as commercial banking. The financial turmoil generated by Iceland's banking sector (in which local investor groups gained control of the three main banks following privatisation) has provided a salutary lesson on the risks of ownership links between banking and non-financial sectors (OECD, 2009).

Existing checks against self-serving behaviour

Similar to most policy efforts elsewhere, attempts to limit the downsides of company groups use standard tools of corporate governance, *i.e.* there are no specific legal or regulatory measures defining and limiting the groups themselves. Several provisions in the 1999 Company Law aim, *inter alia*, to combat abuse of position by controlling shareholders (see Table 2.5). These include: disclosure of information rules for private companies that are part of publicly listed groups; special fiduciary duties; mechanisms giving minority shareholders special rights, for instance, in transactions with related parties and takeovers; and rules aiming to reduce the influence of controlling shareholders in determining the composition of company boards.

Several other measures to tighten corporate governance have been taken in light of recommendations made by a government-appointed committee (Goshen Committee, 2006). These broadly aim to give stronger powers to minority shareholders and independent directors, notably:

- Requirements that independent (and external) directors form a majority of the company audit committee and that an external director is the chairman of the committee. There are also new rules on the duties and procedures of the audit committee. Specifically, it has to now make recommendations following analysis of the company's financial statements, and the board of directors is obligated to discuss these recommendations.
- Establishment of a specialised economic court (or more precisely a special chapter of the existing Tel Aviv District Court) whose core objective is to provide minority shareholders with better access to legal procedures (the court began operating in late 2010).
- Changes to voting rules on related-party transactions: a majority of shareholders who are not interested parties to the transaction is now required, previously a vote of only one third was required (the Goshen Committee recommended to relax this to a simple majority once the economic court was established, but this has not been enacted).

In addition, bank credit and institutional funds' investments are subject to various limitations. Caps are imposed on the amount of a bank's capital that can be extended to any single borrower, group of borrowers and related-party borrowers (Table 2.6). The rules (some are slated to change) aim primarily to protect bank stability and therefore focus on limiting the concentration of the bank's credit supply. This of course does not mean that intra-group banking credit is insignificant. For instance, a bank's credit may account for a substantial share of the total credit extended to a group, while still remaining within these

Table 2.5. **Notable corporate-governance provisions in company and banking legislation**

Issue	Provisions (summary)
Provisions in the Company Law (1999)	
General fiduciary duties	All shareholders are required to act "in good faith and in a customary manner". However, in addition there are additional requirements for some classes of shareholder, notably controlling shareholders. Such shareholders are expected, in addition to "act fairly" towards the company. Also, in decisions on transactions with interested parties, these classes of shareholders are under an obligation to disclose personal interest.
Decisions on dividend distributions, transactions with interested parties, inspection of company documents and voting procedures	Procedures to facilitate absentee voting and special powers for minority shareholders regarding agenda items and extraordinary general meetings.
Decisions on "extraordinary related-party transactions" (a transaction not in the company's ordinary course of business, not undertaken in market conditions, nor one that is likely to substantially influence the profitability of a company, its assets or liabilities)	Approval of a transaction requires a majority vote of not interested parties or failing this a non-majority vote as long as the "no" vote among non-controlling shareholders does not exceed 2% of total voting rights.
Takeovers	A specific procedure (a "special tender offer") has to be followed if a purchase will bring a shareholding above 25% of voting rights (if there is no other such shareholder) or 45% (if no other shareholder has more than 50%). A separate procedure applies ("complete tender offer") applies when a purchase will bring a shareholding to more than 90% of the shares in a company.
Provisions for legal action against management, the board of directors or other shareholders	Breach of the Company Law leads only to civil suits, while breach of the Securities Law can lead to criminal actions. Provisions for class actions were widened in the Class Action Law (2006), which permits courts to consider claims relating to any action stemming from ownership, holding or purchase of a security or trust.
Independent directors	There must be a total of at least two independent directors, of which at least one must be an "external" director. Among the eligibility criteria, these directors, notably, must have no economic or family relationship to corporate management or to major shareholders. In addition, external directors must have financial or accounting expertise (or a similar area if another external director has such qualifications). At least one half of shareholders, excluding controlling interest, must vote in favour of each independent director (or the total number of votes opposing the appointment from among the non-controlling shareholders is less than 2% of the total voting rights in the company). These directors are appointed for three years, and remuneration is regulated by the Ministry of Justice. Mandatory separation of the roles of Chairman of the Board and the Chief Executive Officer (temporary unification up to three years is allowed subject to approval of least two-thirds of voting shareholders).
Provisions in the Bank (Licensing) Law (1981)	
"Fit and proper" regulations	Shareholdings exceeding 2.5% require special reporting requirements; added shareholdings of more than 5% require a permit for which further conditions and approval by the Bank of Israel are required. One shareholding is identified as the "controlling shareholder" and has to fulfil further conditions. Legislation is being prepared to alter the system such that supervision can operate without a controlling shareholder.

Source: OECD (2011c).

limits on concentration of credit in its portfolio. In the case of institutional investment, there are limits on investment in a given tradable bond series and restrictions on investment in non-tradable bonds. Nevertheless, substantial intra-group bond holdings are possible (*e.g.* via investment in multiple bond series). Funds' shareholdings are quite restricted in relation to companies within the same group, though there are plans to ease these rules somewhat (Table 2.6).

Assessing the options for further reform

In September 2011 the committee established to look into company groups (known as the Concentration Committee) issued its preliminary recommendations. These do not aim for a wholesale break-up of groups, which makes a good deal of sense. The current "controlling shareholder" model is well established and is not unusual in international comparison. In any case, diversified share ownership with management control has

Table 2.6. **Summary of loan and investment limits for banks and institutional funds**

Rules on indebtedness to banks	
General limits on borrowers' indebtedness	A single borrowing entity's indebtedness cannot exceed more than 15% of any bank's capital. For groups of borrowers this limit is either 25 or 30%, depending on circumstance (there are plans for a single limit of 35%). In addition, the total indebtedness of the six largest borrowers (including groups of borrowers) cannot exceed 135% of a bank's capital (there are plans to reduce this to 120%).
Special limits in the case of related parties (which generally includes entities within the same company group as the bank)	Aggregate indebtedness to the bank of all related parties cannot exceed 10% of the bank's capital. When the indebtedness of a component in the company group is mainly to the same banking corporation, the indebtedness of that component cannot exceed 10% multiplied by its relative share in the core holding. For example, for a company controlled by a 40% stake in the same group as the bank, then its indebtedness cannot exceed 4% of the bank's capital.
Limits on institutional funds (apply to all types except mutual funds)	
Limits on investment in a single tradable bond series	Limits vary according to the bond's credit rating. The maximum limit is 15% for a single fund and 25% for the institutional body as a whole. There are plans to remove the limit for individual funds, cancel the link to the bond's credit rating and apply the limits to insurance companies' nostro accounts too.
Limits on investment in non-tradable bonds	Pension and provident funds face no limit in the share of investment in non-tradable bonds as long as the bonds are rated BBB– or above. Otherwise there is a limit of 7.5% of assets. Insurance companies face no limit as long as the bonds are at least BBB rated. There are plans to impose the same rule across all institutions.
Limits on security holdings in "related parties"	Pension and provident funds cannot invest in securities issued by companies belonging to the same business group. Insurance companies cannot invest in companies which control them (but can invest in "sister" companies). There plans for a common rule that allows investment up to a certain limit in related parties but not if these are closely held companies and/or "mother" companies in the group.
Tax disincentive	If holdings exceed 20% of the stock of a listed company, then the tax-free status (with respect to both income and capital-gains tax) no longer applies to the entire holding.

Source: Bank of Israel.

proven to have significant agency problems of its own. Nevertheless, the Committee is proposing deep regulatory reforms (State of Israel, 2011), most notably:

- As regards the relationship between real and financial sectors, the Committee recommends prohibiting a significant "real" entity from controlling a significant financial entity. This separation of large real and financial entities would be a welcome move. However, its ultimate success would depend heavily on which individuals or entities end up controlling the financial firms. Also, judging by the Korean experience (Box 2.3), ownership caps on banks (and possibly other financial entities) help prevent

Box 2.3. **Korea's ownership limits on financial entities**

Given the similarities drawn between Israel's business groups and the *chaebols*, Korea's experience in limiting relations between financial and non-financial entities is instructive. Non-financial (and financial) entities have long had restrictions placed on bank ownership. At present, no entity can own more than 10% of the shares in a given bank (15% in the case of local banks, see OECD, 2008). However, it is worth noting that these limits were seemingly not sufficient to prevent the problems in corporate governance that emerged during the 1997 Asian Crisis (OECD, 1998). In particular, intra-group loan guarantees had become a significant source of vulnerability. Thus, while the authorities have maintained the caps on ownership, they also engaged in a wide range of other steps to improve corporate governance and strengthen competition by removing barriers to imports and inward foreign direct investment in the wake of that Crisis. Arguably one of the most significant moves was to actually let one of the largest groups fail, which significantly altered the *chaebols*' perception of implicit government guarantees.

undesirable relations between financial and non-financial entities, but are not a panacea. Furthermore, there is a risk that in reaction to caps on ownership the business groups might engage in alternative forms of intra-group financing that may themselves be less than desirable.

- Other steps are being recommended that also relate to financial entities: restrictions on directors holding concurrent directorships in financial and non-financial entities; additional restrictions on the control of one significant financial entity by another financial entity to those introduced in the Bachar Reform; and, tighter rules on the exposure of financial entities to any single entity or group of borrowers.
- The Committee is also recommending several regulatory changes in corporate governance to strengthen the protection of minority shareholders. In particular, it proposes legally defining "wedge companies" (*i.e.* ones in which there is a gap between control and equity holdings) and applying additional governance regulations to them. For instance, a minimum of one-third of wedge company board members will have to be elected by minority shareholders (as opposed to two members otherwise). However, there may be concerns that, despite the implementation of these measures, the controlling company may be able to exert undue influence. For instance, if regulations on the fiduciary duty of company directors to all shareholders and the company are in practice not very effective (for example because of difficulties in proving fiduciary negligence), then the controlling shareholder may nevertheless manage to steer board decisions in favour of the group, rather than the company itself. In such circumstances then legislation defining a company group may be warranted as a means of attaching fiduciary duty to the parent thereby bringing transparency to the operations of the group.

In spite of such reforms, the company groups are likely to remain a source of concern. Hence, the establishment of a permanent unit (within an existing supervisory body) or working group charged with monitoring the company groups should be considered. The unit (or working group) could not only monitor the impact of measures aiming to improve corporate governance but also check the financial stability of the groups and thus usefully augment macro-prudential oversight.

In addition, some concerns and problems relating to business groups may not relate to their structure *per se*, and thus policy actions outside the sphere of corporate governance could be warranted:

- Business-groups (and controlling shareholders) may partly be in an advantageous position because of monopoly profits in certain sectors and not because of any strong powers derived, for instance, from "excessive" control. Clearly, this implies a need to ensure policies regarding traditional sectoral competition issues are in good shape. Legislation on this front was strengthened in 2011 with measures providing the competition authority with enhanced enforcement powers when a small number of companies have more than a 50% share of any particular market.
- Popular complaints about business groups may partly reflect straightforward disquiet about the presence of high-earning and wealthy individuals in society. Agency problems in the business groups (or sectoral competition issues) may in fact not be large, but some may anyway believe the rewards to owners and managers are nevertheless unwarranted. Any policy response to this would be better addressed more directly through income, wealth or estate taxes.

Finally, the authorities should continue to promote greater foreign presence in the financial sector and in company groups in general as this would bring a healthy diversification of ownership and control. In meetings held with the Supervisor of Banks in preparation for this Survey, the authorities pointed out that they make strenuous efforts to attract foreign shareholders to the banking sector, whenever opportunity arises. There has been some positive news on this front: in July 2011, UBS announced it would launch financial services for affluent customers, corporations and institutions, and in August the Bank of Israel granted Barclays Bank a foreign bank licence and a permit to open a branch.

Box 2.4. **Recommendations for private-sector finance**

Structure of supervision and macro-prudential oversight

- Remove the supervisory duties currently carried out by CMISD from the Ministry of Finance as part of a broader assessment of financial-market supervision.
- Strengthen further communication and co-ordination among the supervisory bodies, particularly as regards supervision from a functional rather than an institutional perspective.
- Implement plans to publish a financial stability report.
- Focus in particular on regulatory reform and supervision of the non-banking financial sector.

Banking sector

- Build in strong safeguards in the plans to permit wider securitisation.
- Strengthen mechanisms for dealing with banks in difficulty, for instance by augmenting the powers of the Bank of Israel for early intervention.
- Counter evasive actions by banks that circumvent and dilute the impact of tighter regulation of mortgage lending.

Non-banking sector (corporate bond market)

- Adopt more rigorous regulation if weaknesses in the bond market persist in spite of the Hodek reform. In addition, pay attention to the risk that the reform divides the market; more uniform application of regulations may be required.
- Continue to closely monitor bond-market developments, in particular (uncollateralised) corporate-bond financing in the real-estate sector.

Household savings

- Pursue plans to reform the tax treatment of pensions and for life-cycle portfolio adjustment. As part of the latter reform, consider removing regulations that give some forms of long-term savings access to preferential-rate government bonds.
- Simplify the characteristics and range of pension products.
- Refrain from further increases in mandatory pension savings.
- Phase out tax breaks on savings in the advanced training funds.

Corporate governance and competition

- Implement the proposals of the Concentration Committee, notably the separation of financial and non-financial entities.
- Establish a permanent body, or forum, to monitor the company groups.
- Ensure sector-level competition legislation and oversight are in good shape.
- Promote greater foreign presence in the financial sector, and in company groups in general, as a means of diversifying ownership.

Notes

1. For a more detailed account of the evolution of the financial sector see OECD (2011a).
2. The collapse in bank shares in 1983 was partly the result of price manipulation by controlling shareholders. This prompted the "Bank Shares Arrangement" in which the government took control of four of the five largest banks (all except First International Bank). Shares of these banks were delisted from the stock exchange, with non-controlling shareholders receiving government bonds in exchange for their holdings.
3. Provident funds in Israel are a "pure" savings instrument, notably excluding insurance components. The return is calculated according to the individual's share in the fund's assets (see Table 2.2).
4. Covenants and financial criteria aim to enhance the credit worthiness of bond issues and typically increase in number and strength with investment risk. Examples of commonly used covenants are: merger restrictions; negative pledges (commitments not to pledge assets to other parties); restrictions on the scope of the borrower's business activities; and cross-default covenants (automatic default of the bond if another bond of the issuer defaults). Borrowers may also commit to a cap on overall leverage in company financing.
5. From the final quarter of 2008 to the end of 2009, 50 companies with bonds totaling NIS 17.3 billion at face value entered a debt arrangement and a further 11 companies did so in 2010 (with bonds totaling NIS 2.1 billion). By the end of 2010 there were 52 companies still in an arrangement, but the face value was only NIS 6.8 billion due to the resolution of arrangements involving some large companies.
6. Bank of Israel (2011a, p. 258) estimates the annual revenue cost of the mandatory pension scheme to be NIS 1 200 million per year at 2010 prices (*i.e.* about 0.15% of GDP), while total income supplements for pensioners range between NIS 350 and 400 million. Therefore, even if improbably the mandatory pension savings removed the need for all income supplements, then there would nevertheless be a net fiscal cost.
7. The Bill for Promoting Competition in the Credit Card Market, for instance, includes a regulation with regard to contracts with businesses (such as shops) that forces major cards (issuers of more than 10% of credit cards) to allow other major cards to be cleared under the same contract.
8. Vote differentiation established prior to the 1989 amendment was, in principle, allowed to continue. However, the legal changes also stipulated that new share issues could take place only in the highest voting class, which prompted almost all companies to unify share classes. Currently only eight listed companies still feature vote differentiation.

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ANNEX 2.A1

Key legislation relating to the financial sector

Related supervisory body	Legislation
Supervisor of Banks	Banking (Licensing) Law (1981). Describes the Bank of Israel's powers in awarding licences for the operation of banks and defines limits to banks' holdings and activities. Banking (Service to Consumer) Law (1981). Prescribes consumer protection by instituting fair practices between banks and retail customers and related information-disclosure requirements.
Capital Market, Insurance and Savings Division, Ministry of Finance	Control of Financial Services (Insurance) Law (1961). Control of Financial Services Regulations (Insurance, the Board of Directors and its Committees Law (2007). Control of Financial Services (Provident Funds) Law (2005). Control of Financial Services Regulations (Provident Funds, Distribution Commission) Law (2006).
Israeli Securities Authority (ISA)	Securities Law (1968). The core operational legislation for the ISA. It describes supervisory capacities and relates primarily to the offer of shares and bonds to the public. It also laid the legal framework for the creation of the ISA. Joint Investment Trust Law (1994). The main law governing mutual funds. Regulation of Investment Advice, Investment Marketing and Investment Portfolio Management Law (1995).
General	Company Law (1999). General law applying to all companies with differentiation between private and public entities. Contains many key mechanisms of corporate governance.

Chapter 3

Addressing challenges in the energy sector

Offshore natural-gas discoveries have released Israel from complete reliance on imported primary fuels and are allowing for a cleaner energy mix. Furthermore, additional production will soon come on stream, and there is a reasonable chance of new commercially viable gas finds, and possibly of oil too. The authorities have overhauled the system of royalties and taxes, although how best to use the resulting revenues remains the subject of debate. Concerns about competition in the gas sector have risen following the disruption of imports via the pipeline from Egypt, which has strengthened the market position of the lead consortium developing the offshore fields. Competition concerns in the electricity sector have been longstanding due to sluggish reform away from monopoly provision by the state-owned incumbent. As elsewhere, energy use has important environmental side-effects. A comprehensive plan for reducing greenhouse-gas emissions has been developed recently, which relies primarily on energy-efficiency measures and an increase in the share of renewable-electricity production.

Recent discoveries of offshore natural gas are reducing Israel's heavy reliance on coal and oil. Coupled with the possibility of further finds, they have also raised the prospect of sizeable tax and royalty revenues in the future. However, the extent of competition in the gas sector is a source of concern, and the supply chain for electricity remains almost entirely run by a vertically-integrated state-owned dominant incumbent. Furthermore, Israel has made a late start on commitments to reduce greenhouse-gas emissions. This chapter focuses on how best policy can address these opportunities and challenges.

The distribution of responsibilities for Israeli policies related to the energy sector is fairly typical. On paper at least, the Ministry of National Infrastructures has important responsibilities in the formulation of policies relating to the energy sector (Table 3.1). The Ministry of Environmental Protection has gained greater prominence in determining energy-related policies, and other ministries, such as the Ministry of Transport, obviously play a role in shaping energy use. However, as with many other policy areas, the Ministry of Finance often plays a leading role in setting the policy agenda and in detailing specific measures.

Table 3.1. **Key bodies responsible for energy (and related) policies**

Body	Role
Ministry of National Infrastructures	Overall responsibility for electricity, gas and oil-based fuel sectors, as well as water resources. All supervision of the gas sector operates from within the Ministry. For the electricity sector, the Ministry covers all dimensions not covered by the PUA (see below), notably the approval of investment programmes for generation, transmission and distribution. The various state-owned companies (notably the Israel Electricity Corporation) also fall under the Ministry's responsibility.
Public Utilities Authority-Electricity (PUA)	Established by the 1996 Israeli Electricity Market Law, independent by law and separate from the Ministry of National Infrastructures in terms of budget and staff. Responsible for setting electricity tariffs and standards for the quality of service; and, as of 2005, also responsible for the issuing of licences to electricity-market participants (notably the independent power producers or IPPs). The PUA also advises the Ministry of National Infrastructures on investment projects.
Natural Gas Authority	Supervisor of the gas sector, established in 2003 and independent but also operating "within" the Ministry of National Infrastructures.
Ministry of Environmental Protection	Plays a key role in getting environmental issues on the policy agenda for energy and climate change.
Ministry of Finance	Typically plays a central role in strategic decisions and in the design of specific programmes.

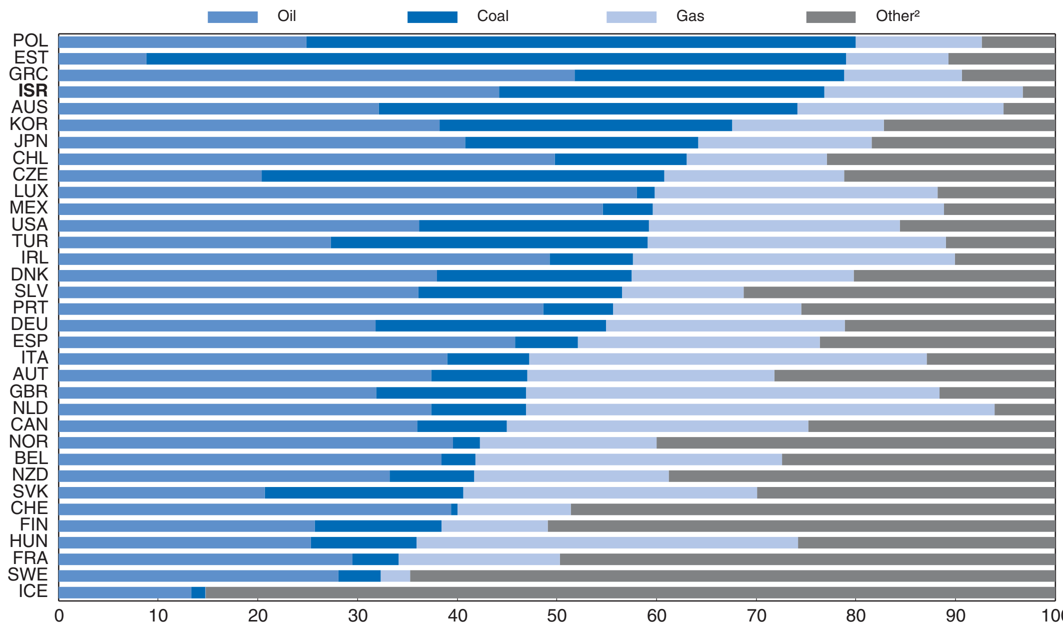
Key features of the energy sector

Israel's energy sector is atypical in several respects:

- Offshore natural gas is significantly reducing dependence on imported oil and coal**.** Until the mid-2000s, primary energy supply was almost entirely met via shipped imports of crude oil (or derived products) and coal (Figure 3.1). Domestic offshore natural gas began to come on stream in 2004. Production and estimates of future reserves have been increasing since then. In addition, a pipeline importing natural gas from Egypt became operational in 2008, but supplies have been interrupted several times in 2011. Natural gas accounted for 20% of primary energy supplies in 2010. Even so, Israel still remains relatively dependent on oil and coal compared with most OECD countries.

Figure 3.1. **Primary energy mix in international comparison**

Total primary energy supply in 2010, percentage of total[1]



1. Data sorted by the combined share of oil and coal in the energy mix.
2. Other includes nuclear, hydro, solar, wind, tide/wave/ocean energy, combustible renewables and waste.

Source: International Energy Agency, *World Energy Balances Database* and OECD calculations.

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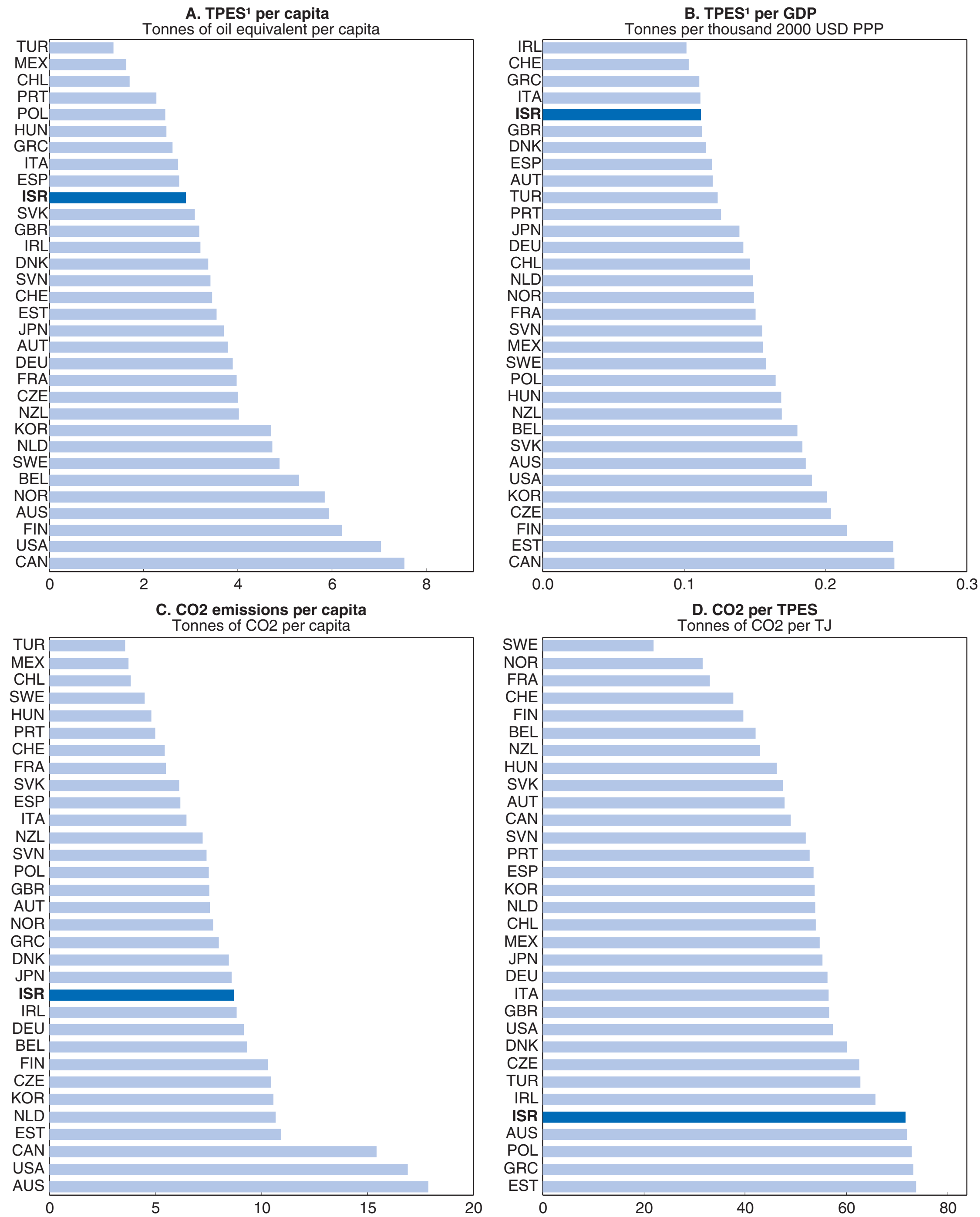
- In other respects the energy economy remains extremely self-sufficient. Electricity is entirely generated domestically, and there are no grid connections with any neighbouring economies, aside from Gaza and the West Bank, where Israel has commitments to supply energy. Similarly, there is no substantial land-based cross-border trade in crude oil or refined products. Israel's geopolitical situation is probably the key factor in this paucity of (land-based) energy connections. Geopolitics also mean energy security is a prominent issue. The pipeline disruptions have served as a reminder of Israel's vulnerability on this front and underscore the particular importance of maintaining multiple sources of supply.
- Energy intensity, both on a per capita basis and relative to GDP, is fairly low in international comparison (Figure 3.2) Contributing factors are relatively small energy-intensive sectors, a reasonably favourable climate, high population density and middle-ranking GDP per capita (in the OECD context). However, total energy demand will continue to grow faster than in most other OECD countries due to high population and per capita GDP growth.
- However, the energy sector ranks less favourably in terms of CO_2eq emissions (Figure 3.2). The comparatively low energy intensity is compromised by a relatively high production of CO_2eq per unit of energy produced due to the high share of coal and oil in the primary energy mix. This share will be reduced in the future but is unlikely to attain the low levels reached by a number of other countries, largely because a significant share of coal-fired electricity generation is likely to be retained for reasons of energy security and price uncertainty.

Figure 3.2. **Energy intensity and CO_2 emissions in international comparison**

2009



1. Total primary energy supply.

Source: OECD, OECD.stat – *Energy Database*.

StatLink http://dx.doi.org/10.1787/888932538833

- Renewable energy via solar-thermal panels for water heating has long been extensively exploited. Therefore, conceptually, some electricity consumption (or other type of heating fuel consumption) has already been replaced by a renewable source. Electricity generation from renewable sources has so far been limited in scope, but there is potential for more. Not only are climatic conditions suitable for solar power but Israeli firms and institutions are also involved in technological developments in this area, thus presenting the possibility of advantageous green-growth synergies.[1]

How policy can best manage natural gas resources

Development of reserves to date

Since 2004, production and estimated reserves of natural gas have increased significantly. Most of the initial production has been from the Mari-B deposit, which is part of the Yam Tethys field (see Table 3.2 and Shaffer, 2011). The development of this field ran roughly parallel to the construction of a land-based pipeline for importing natural gas from Egypt. These twin developments are commonly cited as helping the authorities negotiate favourable prices and supply conditions. Within the next few years, the Yam Tethys reserves will be exhausted (indeed, in 2011 they have been depleted more rapidly than previously expected due to the shortfalls from stoppages in supplies from Egypt). However, other deposits are due to come on stream, most notably from the much larger Tamar field and later the even larger Leviathan field. In total there are around 700 billion cubic metres (bcm) of reserves in these, although only Tamar (250 bcm) has thus far been confirmed as proven or probable according to standard criteria.[2] Most recently, there have been discoveries in the Myra and Sarah fields, although their size remains highly uncertain (estimates have not been included in calculations for this chapter).

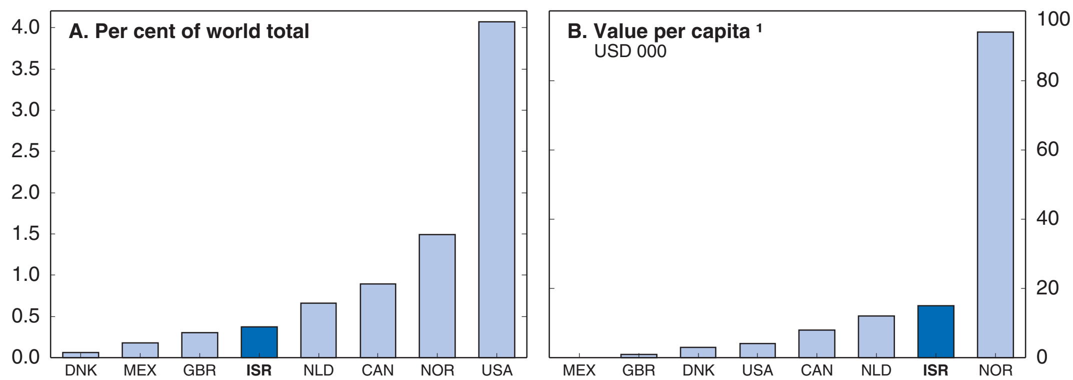
While these reserves are significant, they will not transform Israel into a resource-rich economy with powers to influence global prices on the scale seen in some countries. Even taking the total of both proven and unproven reserves (notably the Leviathan field), in

Table 3.2. **Summary of natural gas resources and supplies (as of November 2011)**

Field	Development to date
Offshore fields	
Yam Tethys	Most production has been from the "Mari-B" deposit which has been supplying gas to the Israel Electricity Corporation (IEC) since 2004. As of 2010, approximately 17 bcm had been extracted and 10-15 bcm remained. The deposit is projected to be fully exhausted within the next few years.
Tamar	Test drilling in 2008 confirmed reserves of around 250 bcm (184 bcm are classified as "proven" and the remainder as "proven and probable"). Reports suggest production will probably commence in 2013.
Leviathan	Exploratory drilling at the end of 2010 indicated approximately 450 bcm of producible gas, although this has yet to be confirmed as a "proven" reserve. According to press reports, production could commence as early as 2016.
Myra and Sarah	A geological survey in June 2011 indicated a best estimate of reserves of 180 bcm, but there is a wide range between lower and upper estimates.
Other possible gas reserves	An analysis by the US Geological Survey (Schenk *et al.*, 2010) estimated total recoverable resources in the Levant Basin of the eastern Mediterranean of approximately 3 400 bcm of which approximately two-thirds lies within Israeli waters. Taking into account current reserves, this implies perhaps an additional 1 500 bcm or more in total recoverable resources.
Other sources	
Egyptian pipeline	Operational since February 2008, with supply under contracts with East Mediterranean Gas (EMG). Prior to recent disruptions the pipeline provided 2.1 bcm per year to the IEC and approximately 2 bcm to private-sector electricity generators and industry (the maximum operational capacity of the pipeline is 7 bcm per year).
Other (prospective)	A receiving terminal for importing LNG is being planned with annual capacity of 1bcm. The current proposal is for location of the offshore facility close to Hadera.

Figure 3.3. **Natural gas reserves in international comparison**

2010



1. Assuming a gas price of USD 4.5 per million British thermal units (MMBTU), which is equivalent to USD 0.16 per cubic metre. A figure of 700 bcm is assumed for Israel. This includes unproven reserves (the Cedigaz figure is 90 bcm).

Source: Cedigaz, Natural Gas in the World, 2010 Edition and OECD calculations.

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global terms, the resources are very small, representing about 0.4% of the estimated world total, which is somewhere between the remaining reserves in the United Kingdom and the Netherlands (Figure 3.3). On a per capita basis, the reserves are worth around USD 15 000, which is the same order of magnitude as the Netherlands, but well below that of Norway.

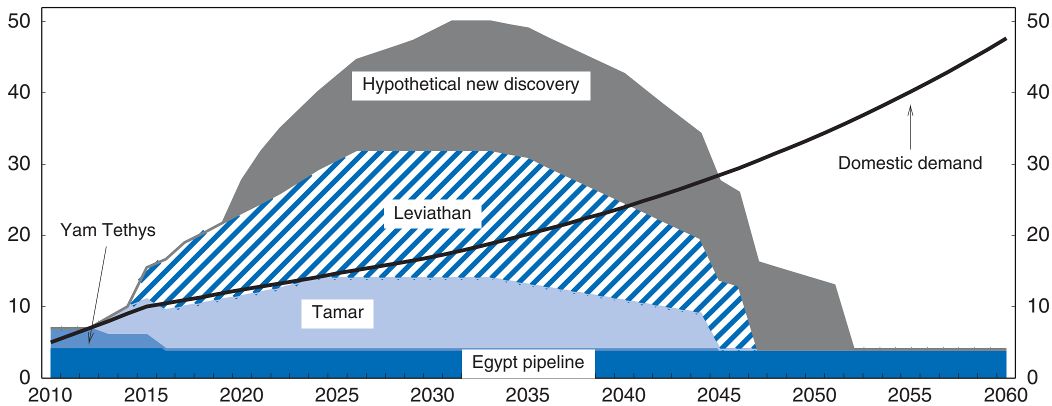
Production will continue to increase and is likely to outstrip levels of domestic demand within the next few years. Domestic demand is expected to roughly match production from the Tamar field plus imports from Egypt (assuming stoppages end) for the next while through further increases in the share of natural gas in electricity production. Currently, natural gas is used in nearly 40% of electricity generation and the share is due to rise to 60% in the next 5 years given the generation profile of facilities currently under construction. While some argue the share of natural gas could be allowed to reach 70%, much depends on issues in energy security and input flexibility. The demand-supply relationship is illustrated in the scenario shown in Figure 3.4. It underscores that, unless large-scale additional domestic demand manifests itself, production from the Leviathan field will probably be available for export. Clearly, if new discoveries are made (such as that shown by way of example in Figure 3.4), the possibility of export increases further. A government-appointed committee has been set up to examine the question and report early in 2012.

It is fairly likely that more gas will be found, and oil finds are also possible, but the scale of discoveries is highly uncertain. But even if the figure of some 1 500 bcm cited in Table 3.2 is valid, the proportion that will be successfully located and then proven to be commercially viable is difficult to gauge. Geologically, the presence of natural gas often means that there are oil resources too, adding further to the scale of possible additional resource finds. Exploratory drilling for oil is underway (for example in the Leviathan field), but, at the time of writing, there had been no significant discoveries. In addition, there has been renewed interest in Israel's onshore shale deposits, with some speculating that, with new technologies, commercially viable oil extraction is possible.

With the prospect of further growth in the role of natural gas, the authorities are planning additional external supply to that provided by the Egyptian pipeline. There are reasonably well advanced plans for a receiving terminal for liquefied natural gas (LNG), the

Figure 3.4. **A possible production and demand scenario for Israel's natural gas**[1]

Billions of cubic metres per year



1. The production and demand trajectories represent only one of a wide range of possible scenarios. Imports from the Egypt pipeline are assumed constant at 4 bcm per year. Yam Tethys field production assumes 15 bcm remaining and exhaustion by 2015. The Tamar field is assumed to contain a total reserve of 250 bcm and Leviathan 450 bcm. The production profiles are based on various sources of information. Tamar production is assumed to start in 2013, Leviathan in 2015 and the hypothetical field in 2020. Demand up to 2030 is based on a description of possible demand growth in the Sheshinski report (State of Israel, 2011) p. 17). Beyond 2030 demand is assumed to grow at 3.5%.

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motivation for which is primarily to cover likely shortages of natural gas in 2012 and 2013. Significant investment is also being made in upgrading the main gas transmission network, mainly via the state-owned network company Natgaz.

Institutional and legal framework

The legal and institutional structure of the natural gas sector is basically sound. The Natural Gas Sector Law of 2002 included a licensing system aimed at encouraging competition in transmission and distribution and the establishment of a regulatory body (the Natural Gas Authority). In keeping with similar systems elsewhere, state ownership is confined to the network operator (Israel Natural Gas Line Ltd., established in 2004). In addition, the fiscal regime for the exploration and production of oil and natural gas has been significantly revised (see below).

However, the institutional framework would be improved if the Natural Gas Authority were fully separated from the Ministry of National Infrastructures. True, the Authority's responsibilities are fairly typical. In particular, it supervises licence holders, approves tariffs and is responsible for setting up arrangements for connection fees and their level (note, offshore exploration and development is under a separate regulator). It also certainly has many features of an independent energy regulator. For instance, it is provided with a specific budget and is managed by a director and a council comprising two state employees (including the director) and two public representatives. However, the Authority is legally defined as being "within" the Ministry of National Infrastructures, and it certainly physically operates as such. Also, the Minister of National Infrastructures recommends the appointment of the Director to the government (in consultation with the Minister of Finance) and the Director can be removed on the recommendation of the Minister. This suggests that there is risk that its independence will be compromised. In any case, policy making is conceptually different from regulation and supervision and thus should logically be separate.

Ensuring competition in the supply chain for natural gas may prove difficult. Although a large number of firms are involved in the exploration and development of the offshore gas, many are operating under a single consortium (headed by Noble Energy Inc.). Hence the roughly parallel development of the natural gas pipeline from Egypt and the offshore fields has provided useful bargaining power for the authorities, though future prospects for this have become uncertain in light of the pipeline stoppages. More competing players in the offshore sector would also be beneficial, though whether this is feasible partly depends on the nature of economies of scale in the industry and on the scale of discoveries in the future. The Israeli Antitrust Authority is paying welcome attention to the companies currently involved in the gas sector. For instance, in September 2011 it announced it was considering officially classifying various companies and partnerships as monopolies or cartels in gas exploration and supply.

The new tax/royalty regime

In light of the offshore gas finds, the royalty-tax regime for companies engaged in the exploration and commercial development of natural gas and oil resources has been significantly altered. The new system is based on the recommendations of an expert committee (the Sheshinski Committee; see State of Israel, 2011), which was established in April 2010 and delivered its final conclusions in January 2011. The legislation was passed by the Knesset in April 2011 with only minor concessions made with respect to the original proposal.

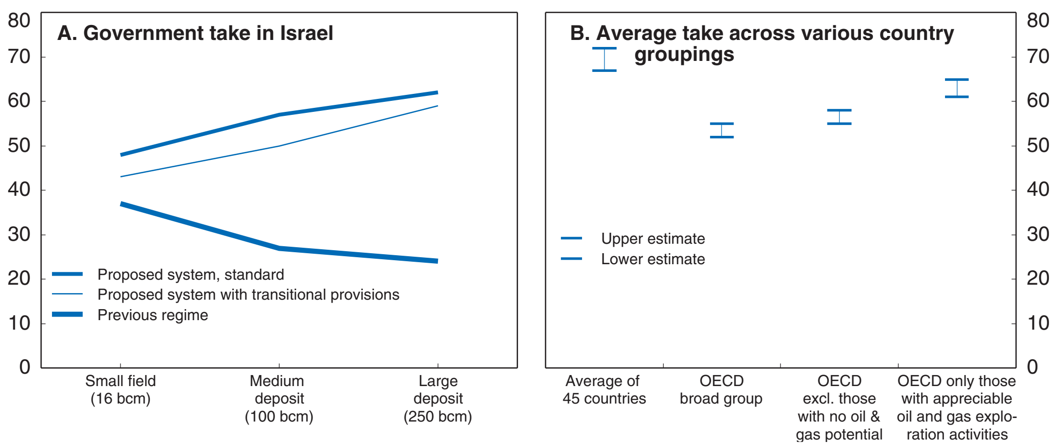
The new fiscal regime is markedly different from its predecessor, which had essentially remained unchanged since its establishment in the early 1950s. Importantly, it is being applied to existing as well as future operations, which was the subject of considerable debate during the finalisation of the legislation. Key aspects of the reform comprise:

- Maintaining the existing rate of royalties (12.5% at the wellhead).
- Cancellation of a “depletion allowance” that had allowed significant reduction in taxable income. The Sheshinski Committee argued, correctly, that the allowance had no economic justification because (unlike “regular” businesses) the oil and gas companies do not actually own the asset (*i.e.* the resources in the geological deposit); rather the state does.
- Introduction of “accelerated depreciation mechanisms” to accumulated costs (separate mechanisms apply to the exploration and production phases).[3]
- Introduction of a special annual profits levy (in addition to regular corporate profits tax) on revenues from production (net of operating expenses and royalties). The levy rate depends on the ratio of cumulative revenues to investment outlays (“R-factor”). Specifically, the numerator comprises the cumulative value of income from production net of operating expenses, royalties and previous levy payments. The denominator comprises exploration costs up to the development phase plus cumulative expenses during the development phase (including interest). The levy is imposed only once the R-factor reaches a certain level and increases progressively from 20% to a maximum of 50%. The levy is calculated separately for each field licence (*i.e.* it is ring-fenced).
- Transitional provisions to lighten the fiscal burden for existing and upcoming production (*i.e.* the Yam Tethys and Tamar fields). For example, the minimum R-factor for imposition of the profits levy is higher for production commencing before January 2014.

In broad terms, the new fiscal regime has raised the effective tax on resources significantly. Simulations by the Sheshinski Committee show that the ratio of fiscal to total revenues over the lifespan of extraction (the "government take") would have been less than 30% for sizeable deposits under the previous fiscal regime (Figure 3.5). Under the new regime the government take has roughly doubled. For instance, according to those simulations, the take is now around 60% for a deposit of 250 bcm. This is similar to levels elsewhere. For instance, the average take among OECD countries with appreciable oil and gas exploration has been estimated to be in the range of 61-65% (State of Israel, 2011).

Figure 3.5. **Comparison of the government take under the new tax-royalty regime**

As calculated by the Sheshinski Committee, percentage



Source: Sheshinski Committee Final Report (State of Israel, 2011).

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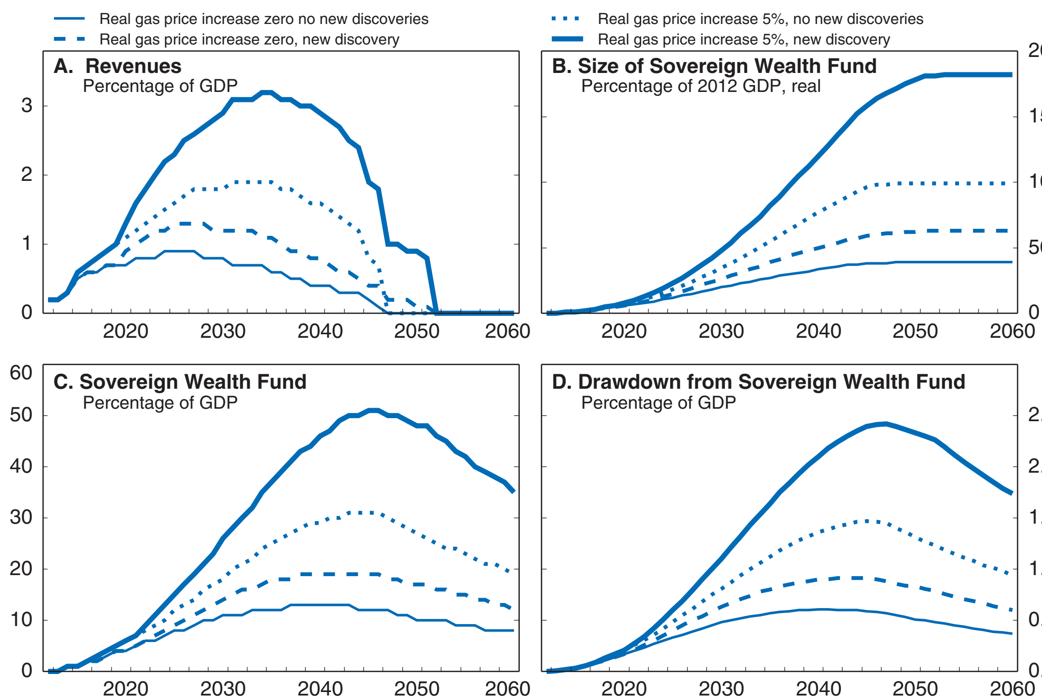
Gas-related fiscal revenues should be ring-fenced

Revenues from natural resources can all too easily be frittered away with little permanent benefit to society if directly channelled into general government revenues. In any case, on the grounds of inter-generational equity, there should be a permanent, or at least long-term, social benefit from the revenues. This is because (excluding regular corporation tax) the taxes and royalties are conceptually the proceeds from the sale of a non-renewable publicly owned resource. As such, the benefits should accrue to both current and future generations.

Bearing in mind the scale of current reserves and the reasonable prospect of further finds, a transparent commitment on how the funds will be used is needed. Revenues should neither be channelled into general government revenues, nor put into a special fund or budget line earmarked for certain areas of public spending. Probably the best way of ensuring that both current and future generations can benefit is to create an independently managed sovereign wealth fund (SWF), the purpose of which is to hold revenues from resources, allowing only a relatively small amount to be drawn off each year (typically in line with the real return on the fund, *i.e.* perhaps 4-5%) for use in government spending (such as education, poverty reduction or transport infrastructure). Given the broad production pattern depicted in Figure 3.4, then income from natural gas could be characterised as temporary (as in Norway). Resource-related revenues will put upward pressure on the real exchange rate. This "Dutch disease" can crowd out other economic activity and significantly reduce employment, which may be difficult to re-establish once the resource is exhausted. A

SWF invested abroad, as in Norway, can contain Dutch-disease effects. Also, swings in the global gas price can have undesirable consequences if the budget is not insulated by putting the proceeds into the SWF (as Chile does with its stabilisation fund). Figure 3.6 (see also Box 3.1) illustrates scenarios for a fund in which only the real return is spent each year. If the

Figure 3.6. **Sovereign wealth fund simulations**[1]



1. Production is based on the scenarios shown in Figure 3.4. Other key assumptions: 1) natural gas price of USD 6 per million British Thermal Units; 2) exchange rate NIS 3.6 per USD; 3) annual growth in prices growth and GDP deflator, 2%; 4) real GDP growth, 3.5%: 5) nominal interest on sovereign wealth fund, 7%; 6) GDP in initial periods (2012) NIS 900 billion; and 7) government revenues as a share of turnover ("government take"), 0.6.

Source: OECD calculations.

StatLink http://dx.doi.org/10.1787/888932538909

Box 3.1. **Simulations of sovereign wealth funds**

Sovereign wealth funds (SWFs) can ensure a permanent (or at least a long-term) stream of income from the exploitation of a natural resource by creaming off only a small share of the fund each year (the drawdown). The simulations shown in Figure 3.6 use the production scenarios shown in Figure 3.4 to calculate government revenues and the accumulation of a hypothetical fund under various assumptions. Notably, the "government take" is assumed to be 40%, and the real rate of return on the SWF is assumed to be 5%. The drawdown rate is set equal to the real rate of return.

Setting the drawdown rate equal to the real rate of return means the fund stabilises at a constant value in real terms in perpetuity. This is illustrated in the top left hand panel of Figure 3.6, which shows the accumulation of the real value of the fund over time under different scenarios. Conceptually this is attractive because it implies an income stream of constant value in real terms for all future generations. However, real GDP growth means that the size of the fund and the drawdown, as percentages of current GDP, do not stabilise at a fixed value but rather decline in the long run. This explains why the bottom panels in Figure 3.6 peak and then decline.

price of natural gas is assumed to remain constant in real terms at current levels then SWF assets would peak at less than 15% of GDP (Figure 3.6, Panel C). However, more discoveries or a steady rise in the price of gas would result in significantly larger asset accumulation. The legislative and administrative framework for the SWF should be established sooner rather than later. Once revenues grow, it may prove politically impossible to then channel them into a fund because too many political commitments for using the revenue directly for public spending may have been made by that point.

Demand issues

The pace of exploration and development of natural gas partly depends on whether production can be absorbed by domestic demand and, if not, what options are technologically and economically feasible for exporting it. This can be a particularly tricky issue for natural gas resources, because, unlike coal and oil they require extensive investment for storage and transportation. The issue of an "excess" of supply over foreseeable demand remains as yet unresolved (though a government-appointed committee has been established). As discussed earlier, it is generally believed that under a business-as-usual scenario, domestic demand can absorb up to around 10 bcm of offshore production per year. Production from the Leviathan field implies total output well in excess of this figure, and this is likely to be augmented by new discoveries further down the line. However, as yet there is no obvious source of new domestic demand. In this regard the private sector will surely propose various gas-consuming investment projects, or export facilities, and put policymakers under pressure to contribute. Such projects may prove viable and desirable, but they should be judged ultimately mainly on commercial grounds. While the government should provide a stable and efficient regulatory and policy environment, it should resist the temptation to subsidise them. Likewise, there is little case for public subsidies to extend the domestic gas pipeline network, for instance so as to provide gas for domestic heating. This is because the public-good aspect of the network is already catered for by the electricity sector where network capacity is already installed (electricity and gas are perfect substitutes in this context).

Scope for more competition in electricity generation and distribution

Many OECD countries have opened up electricity generation and distribution to the private sector, and quite a number have brought choice of providers to the household level. Reforms in Israel have been very slow; in generation, some independent power producers (IPPs), both conventional and renewable, are due to come on stream soon, but the Israel Electric Corporation (IEC) will continue to dominate. In all other segments of the supply chain the IEC remains the sole provider.

A potentially significant step towards private-sector participation and competition was made with the passage of the Electricity Sector Law in 1996, but subsequent reform has been slow. The Law set up a framework for licensed private-sector participation throughout the electricity supply chain.[4] In addition, it established an independent regulatory body, the Public Utilities Authority-Electricity (PUA). The PUA has three responsibilities: *i)* setting tariffs (and the method of updating them); *ii)* setting the criteria for the standard, nature and quality of services; and *iii)* granting of licences and supervision of compliance. Without doubt the legislation was intended to pave the way for a multiple-provider system, similar to those adopted in many other OECD countries. However, the reform process subsequently lost momentum, and the costs implicit in delayed progress have been accumulating. The PUA became operational immediately, but progress in licensing private-sector participation in the supply chain has been limited. Indeed, the only advance has been in granting production licences, and this has been halting. Detailed regulations on the design of IPP contracts for the sale of electricity were not established until 2004, and the first licence was awarded only in 2009.

Although, officially, the ultimate strategic goal remains a market-based structure, concrete reform ambitions appear limited to further expansion of private generation capacity. Reasonably firm backing is being given to additional IPPs, suggesting a desire to at least reduce the IEC's market share in generation. As of November 2011 construction of IPP generation facilities, with total capacity of about 1 300 megawatts (MW) was underway and plans for a further 1000 MW well advanced. Once these are operational, IPP generation will account for a sizeable share of output (total capacity is currently around 12 000 MW). Reform to the rest of the supply chain is proceeding sluggishly. For instance, legislation separating network management from the IEC was drafted in 2007 by the Ministry of National Infrastructures but has yet to be approved by the Knesset.

In the absence of significant movement towards a market model, the IEC will continue to dominate the supply chain. The authorities retain powerful controls on the IECs activities. A recent consultancy report by the World Bank (2010) concludes that the operating margin of the IEC is comparable to a selection of similar operators in other countries, but it has substantial debt (and debt-servicing costs), which reduces net profitability greatly. Several factors are driving this. The IEC has little ability to influence revenues, because tariffs are set by the PUA (see Box 3.2), and the demand for electricity is

Box 3.2. **The main features of electricity tariff setting by the PUA**

The 1996 legislation identifies the PUA as responsible for tariff setting but gives only broad guidelines on how the tariffs should be set. The precise details are laid out in regulations that were initially developed by the PUA and finalised in consultation with the Ministry of National Infrastructures and the electricity industry. In principle, the PUA can make parametric changes to the system at will but in practice would not do so without consultation with the Ministry of National Infrastructures and the relevant operators. The current tariff system has been operating since 2002 and has the following features:

- There are several categories of consumer: "commercial and industrial"; "residential and agricultural"; "general"; and "street lighting".
- For commercial and industrial users (which account for less than 2% of customers but over 50% of electricity demand), the tariffs vary according to season and time of day (there are a total of nine categories). Rates for other users do not generally depend on time of use.
- The tariffs are calculated according to cost-based formulae that comprise three components: generation, transmission and distribution. The tariffs are set so as to yield a specified real return on equity in the three components (7% for generation, 5.5% for transmission and 6% for distribution). The 1996 legislation provides the PUA with some discretion on which costs are included in the calculations.
- The tariffs comprise a fixed charge plus a marginal price per kWh that does not vary with volume of electricity consumed.
- The tariffs are adjusted every six months, or when costs have increased by more than 3.5% since the previous tariff adjustment (whichever comes first).

otherwise largely governed by demographic and economic factors. In addition, all investment projects of any significance have to be approved by the Ministry of National Infrastructures. Hence, both the IEC's leeway in developing new capacity and the profile of its capital expenses are tightly controlled. Also, the strongly unionised workforce is a powerful stakeholder and has a reputation for limiting management's ability to make adjustments in labour cost and for blocking wider reform of the sector.

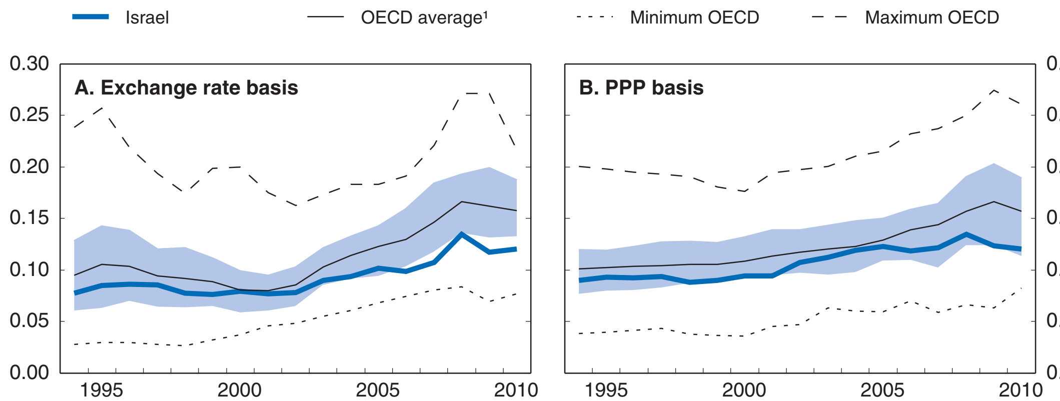
Stronger policy commitment on the direction and timeline of reform to the electricity sector is needed. As such, every effort should be made to overcome the issues that are slowing progress. The final goal of reform should be a market-based competitive model similar to those adopted in many other OECD countries. State ownership and control should be confined to the "network" segments of the supply chain, and there should be wholehearted commitment to promoting competition among the private-sector providers in both generation and distribution, where it is cost-effective and feasible to do so. Reform should entail resolution of IEC's financial difficulties, but this should be contingent on commitments by the company (and unions) to engage in the reform process. The World Bank report (commissioned by the IEC) concluded that there is a need to put the IEC on a sounder financial footing through a combination of an equity injection from the government, increases in electricity tariffs and cost-saving measures (World Bank, 2010).

In addition, reform plans should ensure adequate generation capacity, which appears to be too low at present. More certainty on the path of development ought to also avoid the uncomfortably low reserve margin (the gap between capacity and peak demand) that has developed in recent years. According to the Ministry of National Infrastructures, the current reserve margin is around 9% (of peak demand), which may not be adequate to guarantee reliable electricity supplies in an environment of growing demand combined with uncertainty and funding constraints that may delay investment responses. Furthermore, the Ministry expects further declines in the margin under business-as-usual assumptions. Assuming demand-management tools, such as peak-load pricing, have been fully exploited, this adds to the case for additional capacity. This problem appears to be on the way to resolution. Plans to increase reserve capacity are being implemented, which, in combination with IPPs production coming on stream, aim to push the share of reserve capacity over 15% by 2014.

Whether electricity prices would ultimately be higher or lower as a result of such reforms is somewhat uncertain because the current price is probably artificially low. At face value, retail electricity prices (excluding tax) are relatively low in international comparison (Figure 3.7). However, if the World Bank's calculations are correct, then it appears the prices are not high enough to keep a monopoly provider viable (even with cost-saving measures); the IEC receives financial support from the government. Hence, reform towards a competitive structure, despite likely gains in cost effectiveness, may result in higher electricity prices. Needless to say, developments in global primary fuel prices, which are largely beyond the control of the authorities, will be an important influence on future electricity price developments, with or without reforms to the sector.

Figure 3.7. **Household electricity prices**

Prices excluding taxes, USD per kWh



1. Unweighted average. The shaded area is the OECD range of 25th to 75th percentile. Half of the countries lie inside this range.

Source: OECD, *OECD Economic Outlook 90 Database;* and OECD.stat, *Energy Database*.

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Environmental effects of energy use

Many environmental externalities are closely linked to energy production and use. Most notably, emissions of greenhouse gases (GHGs) and a range of other pollutants arise from the use of hydrocarbon fuels. Israel is no exception. In 2008 (the latest available data, see OECD, 2011a) total emissions were 77.9 million tonnes of CO_2eq (including fluorinated gases, or "F" gases), including 40.2 tonnes (*i.e.* 55% of the total) from energy industries, 15.5 tonnes (20%) from transport, 9.7 tonnes (12%) from manufacturing industries, industrial processing and construction, and the remainder from other sources.

In theory, economy-wide market-based instruments can address environmental externalities in an optimal way. In particular, internalising the GHG emissions can be dealt with through participation in an international cap-and-trade scheme. However, even the most developed system, the EU's emission-trading scheme, is not yet considered effective enough to obviate the need for "flanking measures" such as carbon taxes on sectors where participation in permit trading is impracticable. Externalities in the energy sector are anyway not confined to the issue of GHG emissions. Therefore, policymakers typically use a diverse palette of regulatory and economic instruments that broadly aims to shift the energy mix away from hydrocarbons and cut back on overall energy use.

Past progress in making policy more environmentally friendly and outcomes more sustainable has been rather slow. Regulations leading to the widespread use of solar-thermal panels for water heating in the 1980s were a significant environmental achievement. As a result, water heating in over 90% of homes is at least partially provided by renewable energy. But other forms of renewable energy have not been developed to any great extent; only about 1% of electricity is currently generated from renewable sources. To be sure, the continuing substitution away from oil and coal into natural gas in electricity generation is shifting the energy mix in the right direction, but this should be at least partially interpreted as a shift in "business as usual" (BAU) in response to purely market-based incentives, rather than purposeful environmental policy *per se*.

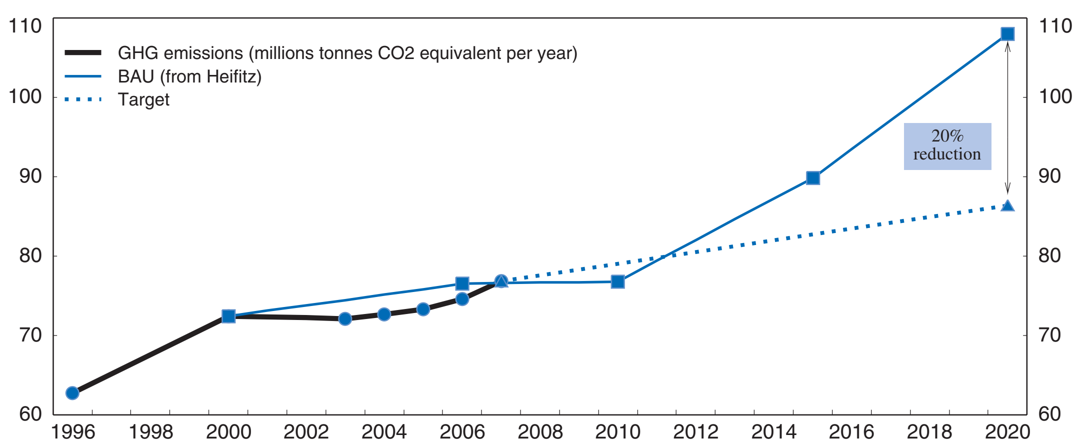
However, in recent years, environmental policy reform has gathered momentum. Some important measures have been implemented, such as the Clean Air Act (2008). This legislation effectively allows GHG emissions to be defined as a pollutant, which potentially opens the door for more stringent monitoring and regulation of GHGs for emissions from large installations. In addition, the authorities have developed a comprehensive strategy for GHG reduction and are already making headway in designing and implementing the relevant measures.

Current strategy and goals in GHG-emissions reduction

Israel has made a relatively late start in formulating explicit targets on GHG reduction and strategies for achieving them. Indeed, an explicit target for GHG-reduction was not defined until 2009. The nature of Israel's involvement in international climate-change fora may explain, in part, why targets were not adopted earlier. Israel ratified the Kyoto Protocol (which imposed quotas for GHG reduction in 2004) but was not an Annex 1 party to the United Nations Convention on Climate Change and therefore did not have to elaborate a specific emissions-reduction commitment.

A practicable "bottom-up" process has been used to establish the target. The authorities commissioned two consultancy companies, Heifetz and McKinsey, to research possible avenues for emissions reduction. On the basis of these reports it was concluded that a reduction of 20% in GHG emissions by 2020 relative to a BAU baseline was feasible (Figure 3.8). This was translated into a timeline of operational goals, the focus of which is for savings of 22 million tonnes CO_2eq in annual emissions by 2020. The initial assessment has been followed up by detailed plans for achieving this goal (see below).

Figure 3.8. **Israel's GHG emissions target**



Source: Ministry of Environmental Protection.

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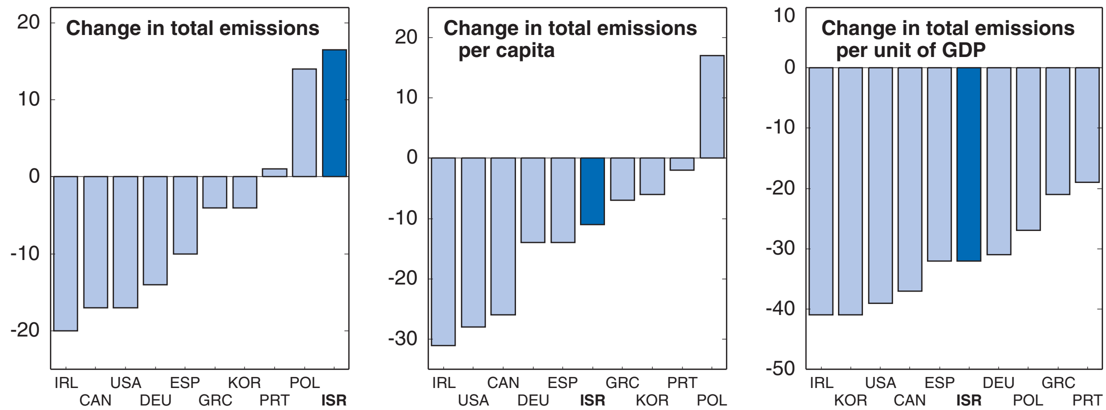
Calculations based on the BAU of the Heifetz study imply that meeting the target will nevertheless mean a 16.5% increase in emissions by 2020 compared with those in 2005 (Figure 3.9). In contrast, targets in other countries typically imply reductions in aggregate emissions, some quite large. However, Israel will almost certainly continue to experience relatively rapid population and GDP growth. As a result, the implied changes in GHG emissions either per capita or per unit of GDP are much closer to those targeted elsewhere (Figure 3.9).

Figure 3.9. **International comparison of the change in emissions implied by GHG targets**

Percentage change between 2005 and 2020

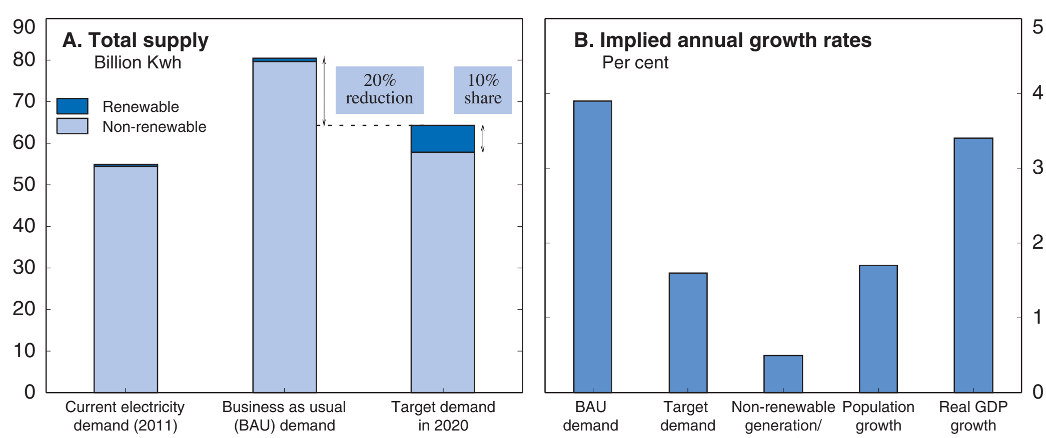


Source: OECD, *Medium-term Baseline Database*; OECD, *OECD Main Economic Indicators Database*; OECD (2011), *OECD Environmental Performance Review*; and OECD calculations.

StatLink http://dx.doi.org/10.1787/888932538966

The plan is for most of the emissions reduction to come from an electricity-based energy-efficiency programme and increased renewable electricity production (in total around 17 out of the 22 Mt CO_2eq). Savings via energy-efficiency measures aim to reduce overall electricity demand 20% below the BAU baseline by 2020. The other goal is to increase the share of renewable electricity generation to 10%, which translates into 2 760 MW of new renewable capacity. The baseline used in framing the targets estimates electricity demand of 80.5 billion kWh in 2020, which implies average annual growth of 3.9%, which is in the region of likely long-run growth in real GDP (Figure 3.10). The energy-efficiency target implies reducing average growth in electricity demand to 1.6%, which requires keeping electricity consumption per capita roughly constant. Taking the renewables target into account it follows that consumption of non-renewable electricity will grow even more slowly.

Figure 3.10. **Targets in energy efficiency and renewables in electricity for 2020**



Source: Ministry of Environmental Protection; OECD, *Medium-term Baseline Database*; and OECD calculations.

StatLink http://dx.doi.org/10.1787/888932538985

The remaining 5 Mt CO_2eq of emissions reduction is attributed to a specific power-plant decision ("Project D", two 650 MW plants) and an assortment of other measures. Initially, coal-fired plants were envisaged for Project D, but it has since been decided to use combined cycle gas-fired plant with coal back-up. If the plants indeed principally use gas, then an emissions reduction of approximately 3 Mt CO_2eq is estimated from this decision. However, at the time of writing there remained some debate on the appropriate generation strategy, with some advocating the use of coal only in extreme circumstances with others proposing that fuel choice should depend on economic factors (principally the relative price of coal and natural gas). Hence, it remains uncertain whether the full emissions saving will be realised.

Targeting has so far been a one-off exercise. This should be followed up with monitoring and targeting that looks beyond 2020. This should include an independent technical assessment of progress in reaching the current target (both in relation to the percentage reduction from BAU and the level of the target). This would help keep the current target "alive" and prevent, for instance, the goals being quietly forgotten or generously re-interpreted. Even with monitoring, the role of the current targets as an impetus to policymaking will fade as 2020 approaches. The parameters of both monitoring and further target setting ought to be clearly defined and, where possible, locked into legislation.

Economy-wide instruments

Although perhaps a distant prospect, greater participation in international emissions trading should remain a strategic goal. Currently, involvement in emissions trading is limited to the Clean Development Mechanism, which is a scheme under the Kyoto Protocol allowing Annex 1 parties to acquire emissions-reduction permits from non-Annex 1 parties (such as Israel). As of 2009, around 54 Israeli projects had been submitted for approval in the areas of waste, agriculture, fuel switching, energy and industrial efficiency (OECD, 2011a). However, the volume of emissions covered is fairly small.

One way of internalising externalities from GHG emissions is through a carbon tax. For example, a study (Palatnik and Shechter, 2010) found that such a tax would significantly reduce emissions with only a minor economic impact, even if the rate of taxation were relatively high. Furthermore, there is a relatively easy option for implementing a carbon tax in Israel. Since a large share of Israel's emissions derives from primary fuels (natural gas, coal and crude oil), then a tax on these constitutes a reasonably effective base for a carbon tax. Furthermore, excise duties on primary fuels are already imposed and could simply be adjusted to reflect a benchmark price of carbon (Table 3.3). In a welcome move, the excise on coal was increased to NIS 43.3 per tonne in 2011 (from NIS 8.6 per tonne), but still remains well below the values commensurate with a reasonable price of carbon. For

Table 3.3. **Implied carbon prices of excises on primary fuels**

Fuel type	Excise (NIS/tonne)	Implied carbon price EUR/tonne CO_2eq	Implied excise at EUR 15/tonne CO_2eq, NIS/tonne
Heavy oil	13.9	0.9	228
Natural gas	15.8	1.2	202
Coal	43.3	3.9	168

Note: Based on an exchange rate of NIS 4.8/EUR and that one tonne of heavy oil, natural gas and coal generate 3.17, 2.8 and 2.34 tonnes of CO_2eq, respectively. Natural gas is a tonne-equivalent figure.
Source: OECD calculations.

instance, calculations suggest the excise on coal would have to be NIS 168 per tonne to be in line with a carbon price of EUR 15 per tonne CO_2eq and those on natural gas and heavy oil would have to be even higher.

Energy-efficiency schemes aim to deliver sizeable savings

Until the adoption of the GHG-reduction target there had been no major schemes for energy saving, which implies there is ample room for efficiency gains. A comprehensive plan was approved by government in 2010 (the Greenhouse Gas Mitigation National Plan, 2011-12; see Ministry of Environmental Protection, 2011), based on a similar plan that was developed at more or less the same time (the National Energy Efficiency Program, see Ministry of National Infrastructures, 2010). The adopted plan envisages savings in electricity consumption totalling 15.95 billion kWh by 2020 through regulatory and behavioural changes. The key elements comprise: *i)* more stringent technical requirements on electrical appliances; *ii)* scrapping schemes for refrigerators and air conditioning units (these received NIS 269 million in the 2011-12 budget, and the programme proposes spending a total of NIS 1.2 billion between 2011 and 2020); *iii)* subsidies in industrial, commercial and public sectors (these received NIS 114 million in the budget, and total spending of NIS 626 million is proposed); *iv)* measures encouraging the adoption of green-building standards (which are voluntary); and *v)* public information campaigns.

While the steps taken towards energy efficiency are quite comprehensive, greater attention to energy efficiency in buildings should be considered. Mandatory green standards should be introduced alongside the current voluntary system. Also, a system of mandatory energy-efficiency certification should be introduced to raise household awareness of energy costs when buying and renting property (OECD, 2011a). Also, consideration should be given to a "virtual power station" approach similar to that proposed in the National Energy Efficiency Programme.[5]

Policies encouraging renewable electricity generation

Plans to reach the goal of 10% renewable-energy generation comprise a mix of tenders for production and quota-based feed-in tariffs. Thermo-solar and large-scale photovoltaic (PV) facilities along with wind generation are slated to account for the lion's share of the future increase in capacity (Table 3.4). The allocation of tenders and setting of feed-in tariffs has progressed reasonably (Table 3.5), and the authorities should work to overcome any obstacles to further development as they arise. As of October 2011, a large share of the intended tenders and quotas for feed-in tariffs for solar-electricity generation had been allocated. However, no contracts had been signed for wind generation, and little progress had been made in lining up biogas or biomass production. Also, there remain further regulatory hurdles before construction can begin. In particular, if installation requires a "change of land use" according to planning law, then this can significantly slow down or even halt development entirely. This will apply to the larger installations planned, but not necessarily to smaller units. According to the Ministry of Environmental Protection, steps have been taken to clarify and, where possible, ease the land-use rules (OECD, 2011a).[6]

Israel's approach to renewables seems reasonable, given the aim of ensuring a certain level of renewables generation capacity. One implication is that the implicit subsidies provided by the guaranteed prices are probably well above the benchmark price of carbon and other externalities. Based on the range of feed-in tariffs in Table 3.5, rough calculations imply an implicit price of abatement from about EUR 250 to 400 per tonne of CO_2eq.[7]

Table 3.4. **Progress in plans to increase solar- and wind-powered electricity generation**

	Planned mechanisms	State of play as of November 2011	Intended capacity by 2020 (MW)
Large thermo-solar or PV	Mixture of tenders and quota-limited feed-in tariffs.	460 MW of licensed tariff production has been made available. In addition, tenders for three plants located in Ashelim (totalling 250 MW) have been allocated. A price equivalent to about US 30 cents per kWh has been guaranteed for the initial years of production. A tender for a thermal solar plant (280 MW) has been issued but has not yet been awarded.	1 200
Medium PV	Feed-in tariff, quota based	About 5 MW production installed and construction due to begin on units totalling 70 MW capacity. A total of 300 MW quota has been made available and is reportedly over-subscribed. The guaranteed price is equivalent to about US 40 cents per kWh.	350
Rooftop PV up to 50 KW	Feed-in tariff. Quota-limited unless located in the periphery or up to 4 KW capacity (in which case no quota).	A first quota (80 MW) has been fully subscribed and an additional quota of 120 MW has been made available. The guaranteed price is equivalent to about US 50 cents per kWh.	200
Wind	Mixture of tenders and quota-limited feed-in tariffs	Current installed capacity is small. No tenders for new capacity have been allocated as yet.	800
Biogas, biomass	Feed-in tariff, quota based	No installed capacity. In 2010 a private-sector proposal for a plant was derailed by local opposition.	210
Total			**2 760**

Source: OECD (2011a).

Table 3.5. **Key incentive mechanisms for renewable energy**

Feed-in tariffs	Feed-in tariffs (NIS per KWH) for the current quotas are 1.51 for facilities up to 50 KW, 1.1 up to 60 MW and 1.02 for above 60 MW capacity. The feed-in rates will begin to fall in 2014, with complete phase-out by 2020. Quotas are allocated on a first-come, first-served basis.
Tenders	Tenders will generally be of a build-operate-transfer (BOT) format. In some the bids will be based on the price of electricity delivered and for others on the land rental for the facility.
Tax breaks	A 25% annual depreciation allowance on solar power electricity facilities was introduced in May 2010. *Under consideration*. Further tax advantages for facilities that have a "local value added" exceeding 70%. *Subject to approval*. Tax-free allowance (up to NIS 18 000 per year) on household income from rooftop PV or wind installations.
Other issues	Profit-sharing conditions. In cases where a facility takes up agricultural land (including pasture for animals) and where local communities have some legal claim to the land (even where, strictly speaking it is state owned), then the provider must split the profits on a 50-50 basis with the local community.

Source: OECD (2011a).

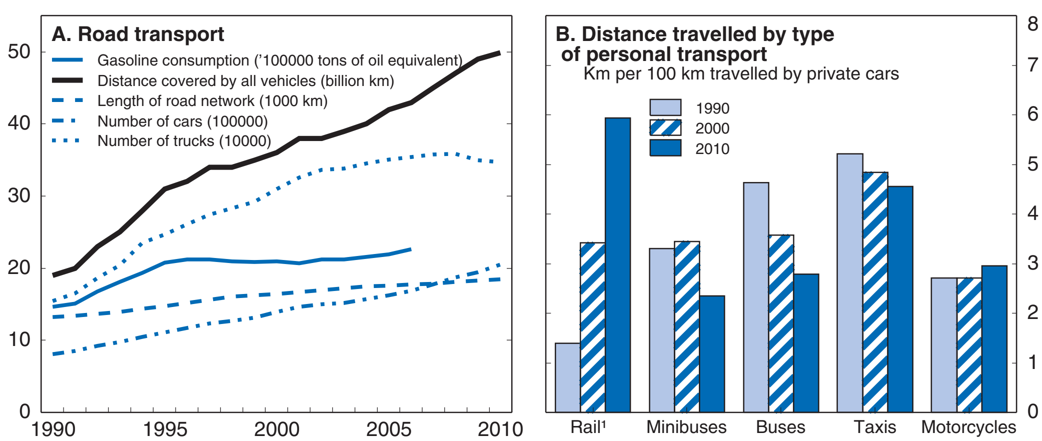
However, implicit abatement costs of this order of magnitude are found in many OECD countries. Even in the absence of such targets, some would argue that renewables require "additional" subsidisation to spur on technological development.

Even if the target for renewables were fulfilled, 90% of electricity generation would be hydrocarbon-based (albeit comprising a large proportion of natural gas) and therefore be producing GHGs. There are no practicable ways of improving this figure by other means in the short run. Carbon capture and storage (CCS) technologies provide one potential solution, but they are not yet sufficiently developed for widespread commercial use. In principle, nuclear power could also substantially reduce GHG-emissions relating to electricity generation. However, continuing uncertainty regarding nuclear power's advisability, particularly in relation to safety risks, and political factors suggest that it is not a feasible option, certainly in the near term.

Energy use in transport

Israel's relatively rapid growth in population and economic activity has been echoed in transport activity, bringing increased environmental pressures and placing heavy demands on transport infrastructure. Total road transport has increased steadily, with 50 billion kilometres travelled by all types of motor vehicle in 2009 compared with 19 billion in 1990 (Figure 3.11, Panel A), and private cars continue to account for the majority of kilometres travelled. Indeed, distances travelled by buses have decreased in relation to private cars (Panel B). However, rail travel has increased quite rapidly, though from a very low base. As of 2009, there were nevertheless only 6.3 passenger kilometres of train travel per 100 km driven by private cars (*N.B.* not passenger kilometres). Given the heavy focus on road transport to date, policy should pursue a two-pronged strategy that ensures the cost of private-vehicle use (including road freight) fully reflects externalities while simultaneously widening the options for other forms of transport.

Figure 3.11. **Indicators of transport activity**



1. For rail the data indicate refer to the number of passenger kilometres, the remaining data indicate the number of kilometres travelled by each vehicle type.

Source: Central Bureau of Statistics.

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Vehicle taxation and road charging

Vehicle taxation has historically been viewed largely as a useful source of public revenue with only a loose connection with environmental concerns. Yet, the environmental credentials of traditional vehicle taxes are coming under increasing scrutiny, and taxes and charges specifically designed to deal with environmental externalities in transport are being introduced as part of a "green-growth" strategy.[8]

A recent scheme differentiating purchase taxes on cars according to environmental criteria is admirable in many respects, but as the 2010 *OECD Economic Surveys* argued, the range of rates ought to be shifted down. For decades, very high taxes have been imposed on the purchase of private vehicles. In 2009, a new system was introduced that maintains a high basic purchase tax (currently 83%), but allows for downward adjustment through a "green credit" based on emissions (see Box 3.3). A range of exhaust pollutants is incorporated in the credit, as well as CO_2, which is particularly commendable. The introduction of the credits is reckoned to have shifted purchases from high to low polluting vehicles by 5% (Bank of Israel, 2011, p. 262). However, the overall scale of these taxes remains at a level that is hard to justify

Box 3.3. **Details of car purchase tax**

Aside from some temporary exceptions (see below) the car purchase tax is calculated as follows:

Purchase tax = basic rate (% of price of car excluding value-added tax) less a "green credit" (a value in NIS).

The basic rate is currently 83%, lowered from 90% when the green credit was first introduced in 2009.

The green credit is based upon an index reflecting the emissions characteristics of the vehicle weighted by values reflecting externality costs (expressed in euros per tonne). The index covers emissions of carbon dioxide (CO_2), carbon monoxide (CO), hydrocarbons (HC), nitrogen oxide (NO_x) and particulates (PM) with cost weights of 30, 500, 900, 10 000 and 20 000, respectively. For instance, a car with emissions of 162, 0.75, 0.05, 0.03 and 0 grammes per km for CO_2, CO, HC, NO_x and PM generates an interim value of 5 580, this is then divided by 30 to arrive at a green credit value of 186. Each index value is then associated with a particular green credit according to 15 emission groups. An index of 251 or above (emission group 15) receives no credit, while the maximum credit for a regular car is emission group 3 where the credit was worth NIS 15 261 as of 2011.

Example. In theory, the possible range of purchase tax for a regular car with a pre-tax showroom price of NIS 50 000 (USD 13 800 at an exchange rate of 3.6) is NIS 26 239 to NIS 41 500, *i.e.* 52 to 83%. Adding in VAT (at 16%) increases the range to 68 to 99%. The total retail price of the car can therefore range between NIS 84 239 and NIS 99 500, depending on its emissions characteristics.

Purchase taxes on electric and hybrid vehicles are treated differently. The purchase tax on electric cars is currently 10%. It will rise to 30% in 2015 and from 2020 it will be calculated as per the formula above (with a corresponding green credit). Similarly, for hybrid vehicles the purchase tax rate is currently 30% and will rise to 45% in 2015 and from 2020 as per the method above. The implicit subsidy to electric vehicles is quite substantial. For example, the purchase tax on an electric car costing NIS 50 000 is NIS 5 000, implying a "subsidy" over a regular car ranging from NIS 21 239 to NIS 36 500 (equivalent to USD 5 900 to USD 10 138).

on economic grounds.[9] They substantially distort relative prices and on environmental grounds it makes more sense to target car use. The authorities have already lowered the basic rate of purchase tax once (from 90%) since introducing the new system. Also, in broader terms the share of vehicle-related revenues relating to car use has been increasing, for instance it increased from 43 to 56% between 2001 and 2009. Further reductions in the basic rate of purchase tax should be made, in combination with measures to increase the cost of vehicle use, *e.g.* via road pricing, congestion charges, and/or higher excise tax on fuel, possibly in the form of a carbon tax.

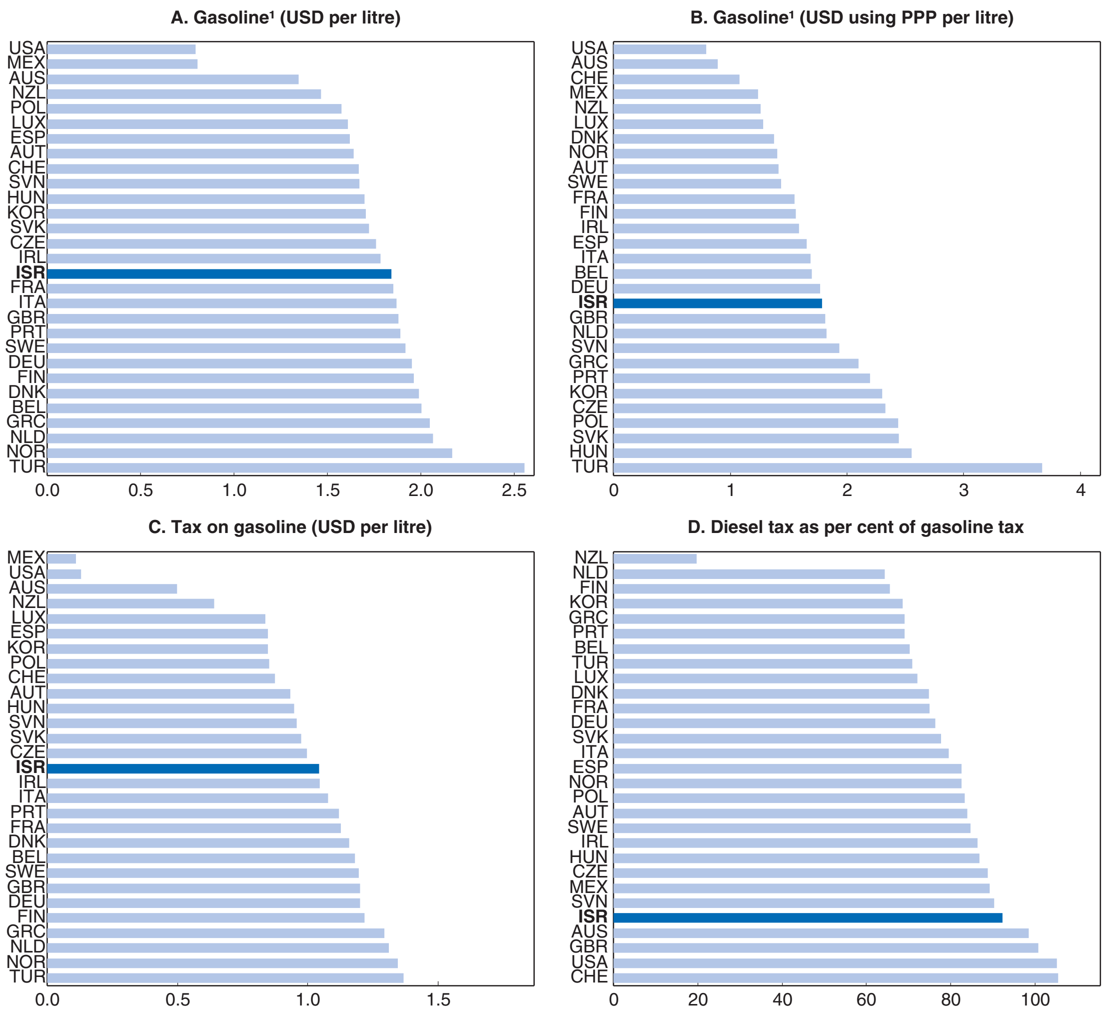
Taxes and charges on car use are more closely aligned to emissions-related externalities than those on car purchase (or similar mechanisms). Indeed, evidence from a Bank of Israel study shows the reduction in vehicle mileage from an increase in the price of gasoline is three times bigger than that from a similar revenue increase through purchase taxes.[10] However, there are a number of policy issues:

- Israel is unusual in that retail gasoline prices are regulated by a formula that, *inter alia*, is based on the market price of crude oil. This regulation essentially aims to counter the risk of weak competition because two providers dominate the supply chain for vehicle fuels. Comparison of the net price of gasoline (*i.e.* excluding VAT and excise duty) in dollar terms indicates the regulation results in a price similar to many OECD countries', and, on this basis, the formula appears to mimic market-based pricing reasonably well. Nevertheless, it would be preferable if the price regulation were made redundant through stronger competition in the supply chain.

- There is some headroom to increase the taxes on gasoline and diesel. Figure 3.12 implies that households and businesses in some other OECD countries tolerate higher levels than Israel's and on this (simple) basis there is some room for hikes in excise duty while remaining within the boundaries of international experience. Furthermore, precise environmental justification for further hikes in gasoline tax is possible, although it would have to be somewhat sophisticated. As for other countries with "European" sized excise duties, precise environmental justification either has to assume a very high implied price of CO_2eq, or take on board additional externalities (see Persson and Song, 2010). This is illustrated in Figure 3.13, which compares the tax on gasoline and diesel in Israel and selected other economies against indicative values of various externalities. While there may be headroom on economic grounds for raising excise on gasoline and diesel, in 2011 at least, the political climate has not been conducive. A hike in excise on gasoline and diesel was postponed in January due to adverse public reaction

Figure 3.12. **Prices and taxes on gasoline and diesel**

2010 Q4



1. Unleaded premium 95 RON; Taxes comprise both excises and VAT.

Source: OECD, OECD.stat – *Energy Database* and OECD, *OECD Economic Outlook 90 Database*.

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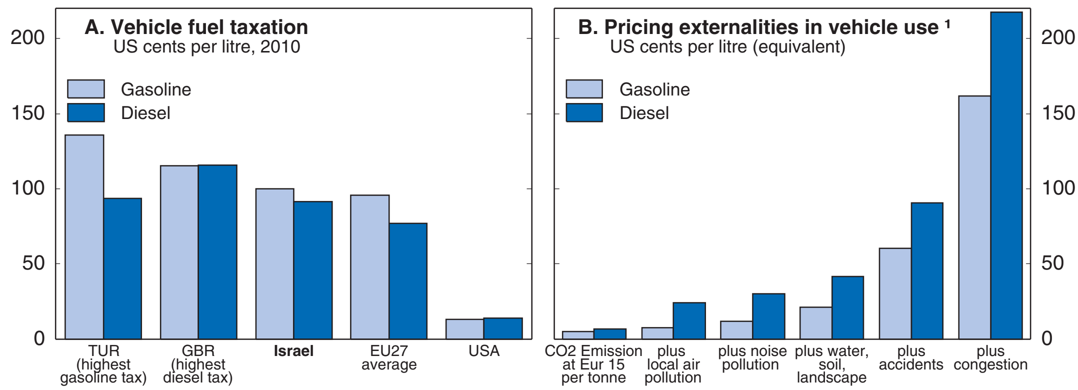
Figure 3.13. **Taxes on gasoline and diesel compared with estimates of externalities**



1. Key assumptions: fuel consumption of 7.5 litres and 6 litres per 100 km for gasoline and diesel, respectively; emission of 2.35 and 3.23 kg CO_2 per litre of gasoline and diesel, respectively. CE Delft externalities in EUR cents per km (at prices in year 2000): Local air pollution (EUR 4 fuel standard), petrol: 0.1; Local air pollution (EUR 4 fuel standard), diesel: 0.6; noise: 0.2; Nature, landscape, soil water pollution: 0.4; Accidents: 1.7; Congestion: 4.4.

Source: IEA, *Energy Prices Database*; OECD calculations based on CE Delft Handbook results reported in Persson and Song (2010).

StatLink http://dx.doi.org/10.1787/888932539042

(unfortunately for the authorities, the world price of oil had risen significantly at the time) and the package of tax measures approved by the government in October 2011 included cancellation of an excise tax increase scheduled for January 2012 (see Assessment and recommendations).

- Road pricing and other schemes targeting car use should be explored further. Most road pricing to date has arisen on a somewhat limited and piecemeal basis from build-operate-transfer (BOT) deals between government and the private sector for the development of certain sections of road. However, an innovative scheme on the main highway into Tel Aviv from the south east began operating at the beginning of 2011. One lane is reserved for paying customers and free for public transport (plus those with three or more passengers). Toll station queues are avoided through camera recognition of the vehicle in conjunction with a web-based payment system. Perhaps even more interesting is that the price varies on a real-time basis according to traffic conditions.

The tax treatment of company cars (these are typically provided via leasing companies) should be further adjusted so that employees face marginal social costs for car use. In all countries, the tax treatment of company cars is tricky, because it is difficult for the authorities to elicit reliable information on the division between private and professional use. Historically, Israel's approach has been generous. For companies, all expenses (leasing, maintenance and fuel) are fully tax deductable, with no cap. Not surprisingly, the provision of company cars has been widespread. According to a report by the State Revenue Authority there were 304 000 company cars in 2008, or about 16% of the 1.9 million private vehicles. The Bank of Israel has calculated that around 10% of employees had a company car in that year. Since 2008, there has been some improvement in policy, with inclusion of an estimated value of company cars in the personal income tax bases of employees. These vary according to the car's characteristics (including emissions characteristics) and have been gradually increased between 2008 and 2011. This move will have at least reduced the incentives for providing company cars, especially ones with high emissions. However, the problem still remains that once an employee gets a company car, the marginal costs of car use are practically zero, because the employers still cover the full (private) costs. Further reform is needed. For instance, a cap on the tax offset on the fuel expenses for the company could be introduced, similar to that already in place for company phones. Preferably the cap should be expressed in terms of fuel use, rather than distance travelled. A fuel-use cap can be easily checked by the tax authorities and gives better incentives for companies to buy fuel-efficient cars and for fuel-conscious driving by employees. In addition, the "car allowances" that feature in the public sector and banking should at least be reduced significantly. Also, provision of free parking to employees should be reviewed.

Electric car usage (practically zero at present) is being encouraged through implicit subsidies in the system of purchase tax (see Box 3.3 and OECD, 2011c). In addition a private-sector system (run by the company Better Place) is due to come on stream that involves battery changing and charging stations (users will not own the batteries but instead pay for a battery service), and the authorities have been setting the ground rules for the technical specification, location and market access of the stations. The environmental implications of electric vehicles depend crucially on what can be reasonably assumed about the emissions of the additional electricity generated to charge the vehicle. In Israel's case, if the marginal emissions in electricity production resemble average emissions, then the environmental impact is quite small because generation continues to rely quite heavily on coal and oil. Alternatively, if it can be assumed that additional production will be gas-based (which is not unreasonable in the Israeli context), then the environmental benefits of shifting to electric cars are substantially improved.[11]

Additional regulation and public-information campaigns in private transport should also be considered, as long as these do not generate excessive economic distortion and inefficiencies and are practicable in terms of implementation and monitoring. The International Energy Agency, for example, recommends regulations relating to tyre standards and use, mandatory efficiency standards for goods vehicles and the promotion of fuel-efficient driving (International Energy Agency, 2008).

Alternatives to private car transport need improving

Tax incentives to discourage the use of private vehicles are unlikely to have a large impact on behaviour without more comprehensive and co-ordinated public transport and the exploitation of feasible alternatives to road-freight transport. To date, public transport has largely comprised state-subsidised bus services, with one company (Dan) being the main provider in Tel Aviv and its environs and another (Egged) running services in most of the other main urban areas. Smaller communities and inter-urban services are run by Egged and several other companies.

Concrete progress in expanding the currently limited rail network has been slow, but recent commitments are encouraging. Following multiple delays due to technical and funding difficulties, a light rail line in Jerusalem began operating in August 2011. However, construction of a long-planned light rail line in Tel Aviv has only just begun. The prospects for inter-city rail links look reasonable with the establishment of a development plan in 2010 that notably aims to complete the construction of a rapid rail link between Tel Aviv and Jerusalem by 2017. In addition, a more general plan for transport was also agreed in 2010 that includes plans for further new rail links and electrification. Unfortunately, it is uncertain whether these plans will go ahead as envisaged, given the past record of delay in developing the rail network.

In a welcome move, metropolitan transport authorities are planned, most notably, one for the Tel Aviv and the surrounding area. Currently, urban transport suffers from poor co-ordination between transport modes, an issue that a regional transport authority would be well placed to address.

Box 3.4. **Recommendations for energy policies**

Gas sector

- Channel the proceeds from natural gas into an independently managed sovereign wealth fund. The fund should be established sooner rather than later.
- Do not subsidise downstream investment to facilitate export or increased demand for natural gas.

Electricity sector

- Make stronger policy commitment on the direction and timeline of reform to the electricity sector. The final goal of reform should be a market-based competitive model.
- Resolve IEC's financial difficulties contingent on commitments by the company (and its unions) to engage in the reform process. Ensure adequate generation capacity.

Energy and the environment

- Follow up the one-off GHG-targeting exercise with monitoring and a system of rolling targets that looks beyond 2020.
- Consider an economy-wide carbon tax by modifying the existing excise tax on primary fuels and aim for greater participation in international emissions trading.
- Expand plans for energy efficiency in buildings. Introduce mandatory green standards alongside the current voluntary system. Also, introduce mandatory energy-efficiency certification.
- Overcome impediments to getting renewable energy on stream, in particular land-use planning and permit processing.

Energy and the transport sector

- Pursue a two-pronged strategy that ensures the cost of private-vehicle use, including road freight, fully reflects externalities while simultaneously widening the options for alternative forms of transport.
- Fully implement the plans to extend rail services.
- Improve taxes and charges relating to vehicle use:
  - Maintain the green credit system, but reduce the basic rate of purchase tax (currently 83%).
  - Make greater use of taxes and charges on car use.
  - Adjust the tax treatment of company cars such that employees face positive marginal costs when driving them for private use. Replace the employee car allowances that are provided in some private service sectors and the public sector with other forms of compensation.
- Consider additional regulation and public-information campaigns to promote efficiency savings in vehicle use.

Notes

1. For example the first solar generating systems built in the 1980s in California were based on technologies developed by an Israeli company. Also, the Weizmann Institute has a long track record in solar-energy research. See International Energy Agency (2010a and 2010b) for an overview of sectoral developments.
2. A commonly used classification of reserves is as follows:
   - "Proven reserves" (1P reserve): those that have been discovered and for which there is a 90% probability that it can be extracted profitably on the basis of prevailing assumptions about cost, geology, technology, marketability and future prices.
   - "Proven and probable" (2P reserve) reserves which includes additional volumes that are thought to exist in accumulations that have been discovered and have a 50% probability that they can be produced profitably.
   - "Reserves growth" typical increases in 2P reserves that occur as oil or gas fields that have already been discovered are developed and produced.
   - "Ultimately recoverable resources" which are the latest estimates of the total volume of hydrocarbons that are judged likely to be ultimately producible commercially, including 1P reserves, reserves growth and as yet undiscovered resources.
3. The various stages are defined by the licensing system in the 1952 Oil Law and comprise two exploration phases and a production phase: *i*) a "Preliminary Permit" stage, which provides rights for preliminary exploration for up to 18 months; *ii*) a "Licence" stage, which provides exclusive rights to conduct seismic surveys and test drillings for up to three years (with possible annual extension up to a further three years); *iii*) and a "Lease" stage, which provides the exclusive rights to explore and produce. The leases are initially granted for 30 years (with possible extension for an additional 20 years). Importantly, the leaseholder is obligated to commence commercial production within three years.
4. An English translation of the Electricity Sector Law can be found on website of the Ministry of National Infrastructures.
5. The National Energy Efficiency Programme was very similar to the plan adopted by the government, but notably it also proposed establishing a special fund to finance the programme using revenues from a special tax incorporated into consumer tariffs for electricity. Technically, the tax would comprise a 1% levy on suppliers' revenues from electricity sales. However, the tax would be a "recognised expense" for the purposes of tariff setting, which means it would be fully passed on in higher prices to the consumer. The special fund made economic sense, in that the proposed tax was reckoned roughly equal to the tariff increase that would be required to fund additional electricity generation if the energy savings were not made. So, in effect, the tax combined with the energy-efficiency measures would represent a (government-run) "virtual" power station whose "generation" comprises energy savings.
6. For instance, rooftop PV requires only a building permit (not a planning permit); generation under 50 MW requires approval only by regional planning authorities (not national planning too) and, all installation of PV units in open space, agricultural land or elsewhere is regarded as a change of use.
7. Based on assuming electricity generated from hydrocarbon fuels produces 0.7 tonnes CO_2eq per megawatt hour, and costs USD 0.04 per kilowatt hour. Exchange rates are assumed to be NIS 3.6 per USD and EUR 0.7 per USD. For a recent international comparison of implied abatement costs of feed-in tariffs see OECD (2011b).
8. For an overview of taxation and the environment see OECD (2010) and for a recent summary of green-growth issues, see de Serres *et al.* (2010).
9. Environmental taxes on car purchases can be superior to those on car use for those pollutants where the emissions vary significantly depending on the technical characteristics of the vehicle (*e.g.* for NO_x, PM and hydrocarbons). In such circumstances, the same car use (in terms of fuel consumption or similar metrics) can have very different emissions levels. As such, a purchase tax can be preferable, even though this on its own implies no marginal charge for the additional emission.
10. Bank of Israel (2010) shows that a 1% increase in the purchase price of cars is estimated to cut total mileage by about 0.06% and raise about NIS 166 million, while a 1% increase in gasoline price is estimated to reduce mileage by about 0.18% and raise about NIS 178 million. By implication, even a revenue-neutral shift from purchase tax to gasoline tax would be helpful. If the purchase price is reduced by 1% and the price of gasoline increased by 1%, mileage would be lowered by 0.12%.

11. Average emissions in Israeli electricity production are around 700 grams of CO_2eq per kWh while purely gas-fired generation may only generate around 185 grammes per kWh. Assuming an electric car requires 0.13 kWh per km therefore implies emissions of 90 or 24 grammes CO_2eq of per kilometre for average emissions and gas-fired emissions, respectively. OECD (2011d) provides a more detailed comparison of electric and conventional vehicles marketed in France, which are the similar to those that will be marketed in Israel.

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