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Republic of Lithuania: Selected Issues

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REPUBLIC OF LITHUANIA

Selected Issues

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Approved by the European Department

March 9, 2007

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I. Financial Sector Issues

A. Introduction

1. **Banks dominate the financial sector.** They hold the majority of assets in the financial sector, including the nonbank sector. The nonbank sector is still small, albeit growing rapidly. This growth of the nonbank financial companies, however, is partly an extension of rapid bank credit growth. Staff's analysis of financial sector vulnerabilities therefore focuses on banks.

2. **Despite rapid credit growth, banks can withstand nonsystemic shocks.** Rapid credit growth is always a source of concern since poor credit decisions are not revealed until it is too late. Nevertheless, there are four mitigating factors. First, bank's financial indicators look sound; however, such indicators are not reliable because they may be backward looking. Second, bank-by-bank and aggregate stress tests indicate that nonsystemic shocks can be weathered both on average and by the systemically important banks. Third, the systemically important banks are all owned by reputable parent banks with A+ Standard and Poor's credit ratings. Fourth, bank supervisors have taken steps to strengthen banks' capital.

3. **The mitigating factors notwithstanding, proactive supervision will have to keep pace with new challenges.** First, banking sector stress tests generally do not include scenarios of a broader macroeconomic slowdown. Hence, modeling efforts have to be expanded. Second, as the nonbank sector becomes larger and more sophisticated, the possibilities of unregulated credit risk will increase and will have to be more closely monitored. Close coordination of bank and nonbank supervision will become more important than at present. Finally, Basel II, to be introduced on January 1, 2008, raises new challenges, including ensuring greater modeling expertise by the supervisory authorities.

B. Structure of Financial Sector

4. **Three foreign-owned banks, dominate the financial system.** The bank asset-to-GDP ratio is currently about 64 percent. Recent estimates suggest that the nonbank asset-to-GDP ratio is 27 percent. This implies that banks account for 70 percent of the financial system (Table I.1). The banking system, in turn, consists of nine banks—of which six are subsidiaries of foreign banks—and two branches of foreign banks. The three largest banks (SEB Vilniaus Bankas, Hansabankas, and DnB NORD Bankas) not only controlled 69 percent of banking sector assets at end-2006 but also a substantial share in some nonbank market segments (text table right and Table I.2). The heavy concentration was reinforced in 2006 as these three banks generated three-fourths of the

Market Share of the Three Biggest Banks, 2006 1/
(In percent of assets; end period)

Banking sector	69
Life insurance	66
Second-pillar pension funds	94
Third pillar-pension funds	93
Collective investment undertakings	51

Sources: Bank of Lithuania; Insurance Supervisory Commission; and Securities Commission; and IMF staff calculations.
1/ SEB Vilniaus Bankas, Hansabankas, and DnB NORD Bankas.

credit growth during the year. The three are, however, all owned by foreign banks with A+ Standard and Poor's credit ratings (text table below). The parent banks have an incentive to enforce credit management techniques in their Lithuanian subsidiaries to match their headquarter risk management approaches.

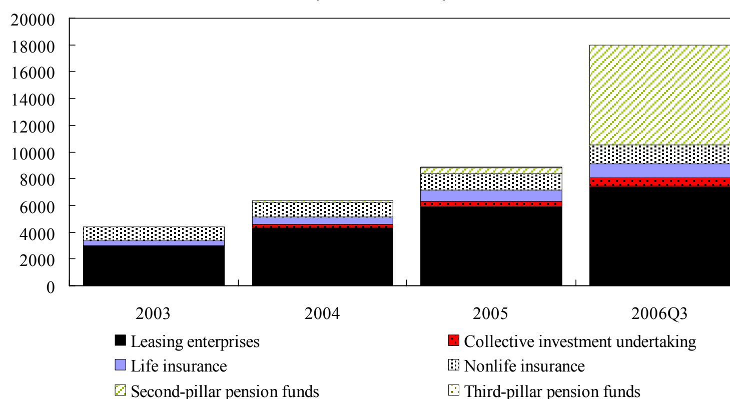
Three Largest Banks, 2006
(In percent of banking system assets; end period)

Bank	Parent bank	Parent bank's credit rating 1/	Market share
SEB Vilniaus Bankas	SEB (Skandinaviska Enskilda Banken AB) (Sweden)	A+	32.4
Hansabankas	Hansapank (Estonia); ultimate owner: Swedbank AB (Sweden)	A+	23.9
DnB NORD Bankas	Bank DnB NORD A/S (Denmark); ultimate owner: DNB NORD Bank ASA (Norway)	A+	12.7

Source: Bank of Lithuania; Standard and Poor's; and IMF staff calculations.
1/ Standard and Poor's credit rating.

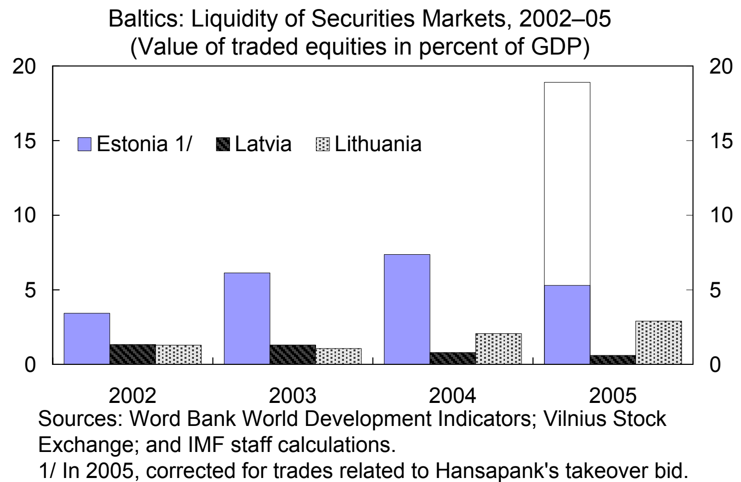
5. **The nonbank financial sector has benefited from structural reforms.** First, the pension reform in July 2003 introduced second- and third-pillar pension funds. Participants could start to sign up on a voluntary basis in 2003, and first assets were accumulated in 2004. Second, compulsory motor third-party liability insurance was introduced on May 1, 2004. Third, collective investment undertakings (CIUs) were introduced in November 2004. In turn, they have helped develop the stock market because they invest a substantial portfolio share in Lithuania (Table I.3). Other spillover effects include the growth of mortgage insurance along with the rapid growth of mortgage loans.

6. **The nonbank sector has grown rapidly since 2003.** Leasing has, until recently, been the largest segment of the nonbank sector, growing at 30 percent a year. Second-pillar pension funds have shown the highest rate of growth and their assets are currently of the same order of magnitude as those of leasing companies (text figure). Total assets of funds, leasing companies, insurance, stock brokerage, and asset-management industries rose to 23 percent of GDP in the third quarter of 2006 from 13¼ percent of GDP in 2003 (Table I.1).



Source: Statistics Lithuania; Baltic News Service; and IMF staff calculations.

7. **Capital markets are still small and illiquid by regional standards.** Liquidity of capital markets has increased since 2003, but is still lower than in Estonia (text figure). Two factors largely account for low liquidity in Lithuania. First, several listed companies are held by only a small number of shareholders and are, thus, not traded frequently. Second, few new companies have entered the market, whereas, in Estonia, it is these new companies that have generated significant turnover.[1]



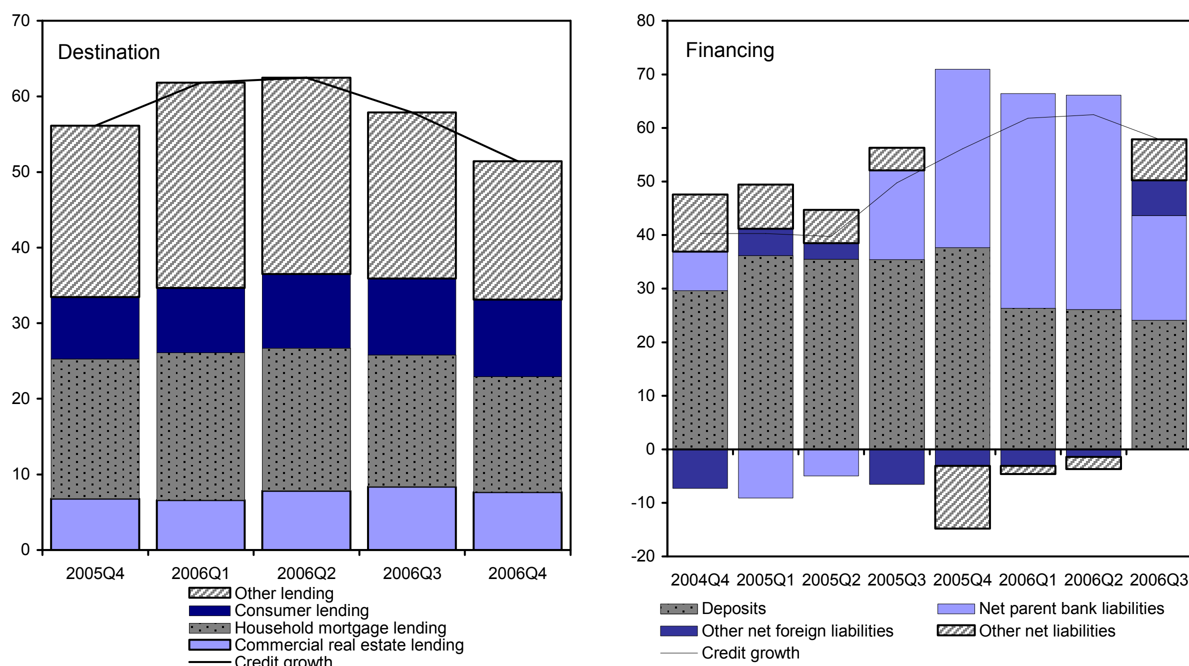
Sources: Word Bank World Development Indicators; Vilnius Stock Exchange; and IMF staff calculations.
1/ In 2005, corrected for trades related to Hansapank's takeover bid.

C. Banking System Vulnerabilities and Mitigating Factors

8. **Of concern, rapid credit growth has been channeled into consumer and real estate lending, and is increasingly financed by foreign borrowing**. Private sector credit growth in 2006 was 51.4 percent year on year. Although corporate lending that was not related to real estate transactions, was a substantial contributor to credit growth, (accounting for 18¼ percentage points or about one-third of the credit growth), real estate and consumer lending accounted for the rest (text figure below). Net foreign borrowing financed on average one-half of credit growth in 2006, compared with one-tenth in 2005. Parent banks were the source of some of this foreign borrowing, but banks increasingly accessed other sources: whereas, throughout 2005, foreign borrowing from parent banks had accounted for practically all of banks' year-on-year growth in net foreign liabilities, by end-September 2006 parent banks accounted for only three-fourths of that year-on-year growth.

[1] According to the Vilnius Stock Exchange, the most effective measures to enhance the overall market liquidity are (i) initial public offerings and the attraction of new companies into the market, and (ii) secondary public offerings, where a strategic investor sells publicly part of its equity, thus increasing the freefloat.

Destination and Financing of Private Sector Credit Growth
(Contribution to year-on-year growth in private sector credit, in percent)



Sources: Bank of Lithuania; and IMF staff estimates.

9. **The financial soundness indicators (FSIs) suggest a sound banking system, but may be lagging measure of financial system health.** The FSIs look sound by regional standards (text table). The share of nonperforming loans (NPLs) deteriorated somewhat in mid-2006 to 1 percent of loans, but the deterioration was nonsystemic in nature.[2] During the first half of 2006, banks' capital adequacy ratio worsened. At the urging of the Bank of Lithuania's Bank Supervision Department, however, steps were taken to raise the capital adequacy ratio to 10.8 percent of risk-weighted assets at end-2006. The FSIs suggest—and stress tests confirm—that the key risk to the banking system is credit risk. Therefore, the following descriptions focus on stress testing credit risk.

Central and Eastern European Countries: Financial Soundness Indicators 1/

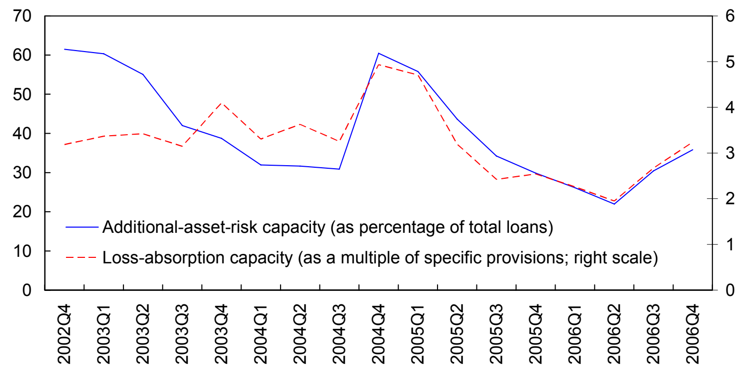
	Capital adequacy ratio	NPLs to total loans	Provisions to NPLs	Return on assets	Return on equity
Bulgaria	16.0	1.7	45.3	2.6	25.8
Croatia	15.0	3.9	58.2	1.3	14.8
Czech Republic	11.7	4.1	62.6	1.4	25.3
Estonia	14.1	0.2	227.8	2.2	23.2
Hungary	12.0	2.1	51.1	2.0	25.1
Latvia	10.5	0.4	105.4	2.2	28.6
Lithuania	**10.8**	**1.0**	**97.0**	**1.5**	**21.3**
Poland	14.7	7.7	59.4	1.5	19.3
Slovak Republic	15.9	2.0	69.3	0.9	10.0
Slovenia	10.5	4.9	34.0	1.0	13.8

Sources: IMF Global Financial Stability Report (September 2006); Bank of Lithuania; and staff calculations.
1/ Numbers are for latest available date (December 2005, March 2006, September 2006, or December 2006) except provisions to NPL for Hungary and Slovenia (December 2004).

[2] The deterioration mainly reflected bankruptcy proceedings at a single electronics manufacturer.

10. **Aggregate stress tests indicate that the banking system could withstand a significant negative credit shock.** Despite the recent increase in capital, the capacity of banks to bear loan losses has declined since end-2004 (text figure below). To stay above their minimum capital adequacy ratio of 8 percent of risk-weighted assets, at end-2006, banks could have increased their specific provisions by 3.2 times, down from 4.9 times at end-2004; or they could have increased loans by 35.8 percent of total loans, compared with 60 percent of total loans at end-2004. Nevertheless, an aggregate stress test suggests that, at end-2006, the banking system could have withstood a three- to fivefold increase in NPLs, before falling below the regulatory minimum capital adequacy ratio. This stress test assumes that banks provision against the increased NPLs, and that this amount is fully subtracted both from regulatory capital and from risk-weighted assets. The post-shock capital adequacy ratio was calculated for the three alternative provisioning rates of 80, 90, and 100 percent. The actual provisioning rate in January 2007 was about 97 percent, but, historically, higher provisioning rates were also seen.[3] To put the results of the aggregate stress test into context, staff calculations indicate that a 20 percent decline in house prices could cause a 2½-fold increase in NPLs (Appendix I).

Capacity for Additional Asset Risk and for Loss Absorption, 2002-06



Note: Increase in 2004:Q4 due to lowering of regulatory minimum capital ratio from 10 percent to 8 percent.
Source: IMF staff calculations.

11. **The results of the aggregate stress tests are confirmed in bottom-up credit risk stress tests for the six largest banks.** In the context of the Article IV discussion, the Bank of Lithuania (BOL) requested the six largest banks to conduct stress tests based on a common set of scenarios. The stress tests show that NPLs in the real estate-related lending portfolio could increase by several multiples before banks fall below the minimum capital adequacy ratio. This is a reflection of the current negligible level of NPLs in the real estate-related lending portfolio. Of course, it is difficult to judge if NPLs could, in fact, increase by significant amounts. In this regard, there are offsetting considerations. On the one hand, the stress tests do not incorporate the effects of a macroeconomic slowdown. On the other hand, they also do not incorporate some mitigating factors, such as (i) the diversification of the corporate real estate sector; (ii) the predominance of first-household mortgages and the international experience of low default rates for such mortgages; (iii) the low household

[3] The FSIs suggest that the ratio of provisions to impaired loans has at times been above 100 percent. However, as banks use their own judgment to provision against a wider pool of NPLs, the actual provisioning rate is typically lower.

indebtedness in Lithuania; and (iv) the wide profit margins on corporate real estate lending (needed to compensate for risk). The stress tests further show that NPLs in the export-related lending portfolio could increase substantially from their current levels before banks fail to meet the minimum capital requirement.[4] Finally, a sudden contraction in parent-bank lending to subsidiaries would require the sale of other liquid assets, probably at a loss, thereby reducing the capital adequacy ratio. The materialization of this risk is considered unlikely unless parent banks face a crisis at home.

12. **The fact that systemically important banks are owned by reputable foreign banks with A+ Standard and Poor's credit ratings further contributes to the resilience of the banking sector.** The Lithuanian subsidiaries have profited from knowledge and technology transfers, in particular as foreign parent banks enforce credit management techniques in their subsidiaries similar to those in their home institutions. Furthermore, the Lithuanian subsidiaries have standing credit lines with their parent banks that guarantee rapid access to liquidity.

13. **Bank supervision has been proactive with respect to credit risk.** The BOL has taken action to encourage more prudent credit risk management:

- In 2005, the BOL urged domestic banks and foreign bank branches operating in Lithuania to follow conservative principles in establishing the value of property and to apply reasonable judgment in evaluating the level of undertaken risks, taking into account potentially unfavorable market developments. The BOL instructed the banks to make sufficient general provisions on potential risk-related losses. Banks responded to these requirements when allocating profits in 2005: they retained 96 percent of profits, the largest part of which was later transformed into share capital.

- In mid-2006, the BOL limited the use of current-year profits for the purpose of defining regulatory capital.

- In 2006, the BOL urged banks to manage risks conservatively, strengthen their capital base, and prudently plan operations in the coming year. As a result, several banks undertook capital injections in late 2006.

[4] The stress tests showed that banks could withstand shocks to interest rate and foreign exchange risks. Neither a steepening nor an inversion of the yield curve would have major repercussions on banks' loss-absorption capacities. Furthermore, a 15 percent depreciation or appreciation of the U.S. dollar would have only minor effects on banks.

- In 2006, the Board of the BOL adopted a resolution placing limits on the type of housing loans eligible for less than 100 percent asset risk.[5]

14. **Finally, the BOL has concluded cooperation agreements with the home supervisors of foreign parent banks and continuously refines this interaction.** These agreements deal, inter alia, with issues of information exchange (Table I.4). In preparation for the introduction of the Basel II Accord, the exchange of information has intensified. The application procedure for the internal-risk-based (IRB) approach and coordinated recognition of external rating agencies (for the standard approach) have begun, as have joint inspections of cross-border bank groups, including their subsidiaries in Lithuania. Crisis-management mechanisms are covered by an EU-wide MOU on the Management of Financial Crises in Banks Operating on a Cross-Border Basis as well as by an additional MOU, signed on December 18, 2006, by the Swedish Riksbank, the Bank of Lithuania, the Bank of Estonia, and the Bank of Latvia.[6]

D. Challenges Ahead

15. **The current stress tests do not include a scenario with an economywide recession that could describe broader systemic risks to the banking system**. There are substantial modeling difficulties with linking macroeconomic scenarios to NPLs. Currently, the BOL only discusses the risks from such a scenario qualitatively. It perceives a slowdown in the real estate market and a liquidity shortage in parent banks, in combination with difficulties in Nordic financial markets, as the most severe risks. The FSAP update later this year will discuss some of the modeling issues that need to be addressed to develop a more quantitative assessment of the impact of such scenarios.

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[5] For example, only those loans that do not exceed 70 percent of the market value of the mortgaged property may carry the lower risk weights allowable to housing loans.

[6] In the EU-wide MOU, all EU central banks, ministries of finance, and supervisory institutions concluded trilateral cooperation agreements on crisis management.

16. **With the growing nonbank sector, it will become even more important to strengthen cooperation between the supervisory agencies for banks and nonbanks**. The BOL conducts consolidated supervision, which covers most of the nonbank sector. Cooperation with other nonbank supervisors is covered by a memorandum of understanding (MOU). However, the interlinkages between banks and nonbanks are increasing due to cross-ownership and a rapidly growing nonbank sector. Furthermore, there are loopholes in the supervisory structure. For example, leasing companies that are not owned by banks are not supervised. In order to strengthen the cooperation among the three supervisory bodies, a working group was charged in 2005 with establishing a combined financial stability and crisis management system in Lithuania.[7] This group has recommended that, to introduce an effective system of cooperation and exchange of information, the Ministry of Finance, the Bank of Lithuania, the Insurance Supervisory Commission, and the Securities Commission should sign a MOU on financial stability and crisis management. This MOU will cover such issues as the horizontal and vertical exchange of information and the coordination of information disclosure to the public. This is a step in the right direction.

Supervisory Authorities

Supervisory Authority	Supervised Institutions
Bank of Lithuania	Banks
Insurance Supervisory Commission	Insurance companies, insurance brokers
Securities Commission	Asset management companies, stock brokers

Source: Bank of Lithuania; Insurance Supervisory Commission; and Securities Commission.

17. **Basel II, which will be introduced on January 1, 2008, will bring new challenges.** The new capital accord will run in a test phase during the fourth quarter of 2007 and will be the official standard from January 2008 onward. The application period for use of credit risk models under the IRB approach started in the first quarter of 2007. With the full introduction of the Basel II Accord in 2008, the lower risk weight on mortgage loans under pillar 1 will likely decrease capital requirements. Furthermore, whereas most banks will implement the standard approach, the three largest banks will implement the IRB approach in accordance with their parent banks. It remains to be seen whether their nonbank subsidiaries will also opt for the IRB approach. Supervising the IRB approach demands new skills from the supervisory authorities. Finally, under pillar 3, the BOL requires an extensive list of bank-by-

[7] The working group was set up under the initiative of the Commission for the Regulation of Activities and Coordination of Supervision of Financial Institutions and Insurance Companies. It comprises representatives of the following institutions: the Ministry of Finance, the Bank of Lithuania, the Insurance Supervisory Commission, the Securities Commission, the Financial Crime Investigation Service under the Ministry of the Interior, the Deposit and Investment Insurance, and the Crisis Management Center under the Ministry of National Defense. Its aim is to draft procedures for cooperation, exchange of information, coordination of actions, and decision-making in financial stability and crisis management, draft the National Plan for Arrangements in Contingencies, and draft the Procedure for Stress Testing, as well as draft legal acts and other measures necessary to enhance the financial stability and crisis management system.

bank information disclosure, which encompasses most of the FSIs currently reported on an aggregate basis only.

Table I.1. Total Assets of Financial Market Participants, 2003–06
(In millions of litai, unless otherwise specified)

	Institutions	2003	2004	2005	2006 (end-Q3) 1/	Growth (Q1-Q3 2006) 2/
Monetary intermediation	Commercial banks	22,031	29,151	44,849	52,577	17.2
	Credit unions	155	230	379	462	21.9
Other financial intermediation	Leasing enterprises 3/	2,976	4,399	5,930	7480	26.1
	Other credit-granting enterprises	17	8	9	...	...
	Collective investment undertaking		161	398	602	51.3
	Other financial intermediation enterprises	594	1,124	1,781	...	...
Insurance and pension funding	Life insurance	401	595	838	1,059	26.4
	Nonlife insurance	1,010	1,090	1,233	1,409	14.3
	Second-pillar pension funds 4/	0	127	410	7,414	1,708.30
	Third-pillar pension funds 5/	0	11	37	47	27
Auxiliary financial intermediation	Stock brokerage enterprises	...	79	111	143	28.8
	Management enterprises	...	25	33	45	36.4
	Insurance brokers	31	36	40	...	...
	Other enterprises with activity auxiliary to insurance agents	15	15	5	...	...
	Other enterprises with activity auxiliary to finan. intermediation	603	701	846	...	...

Source: Statistics Lithuania.

1/ Provisional data.
2/ In percent.
3/ Late 2006 data. Source: Baltic News Service, February 17, 2007.
4/ Pension funds accumulating a part of social security contribution.
5/ Pension funds accumulating supplementary voluntary pension contribution.

Table I.2. Banks, 2006
(End period)

Bank	Owner	Subsidiary/ Branch	Assets (in thousands of litai)
DnB NORD Bankas	Bank DnB NORD A/S (Denmark); ultimate owner: DNB NOR Bank ASA (Norway)	Subsidiary	7,510,001
SEB Vilniaus Bankas	Skandinaviska Enskilda Banken AB (Sweden)	Subsidiary	19,063,040
Hansabankas	Hansapank (Estonia); ultimate owner: Swedbank AB (Sweden)	Subsidiary	14,070,226
Parex Bankas	Parex banka (Latvia)	Subsidiary	759,565
Sampo Bankas	Sampo Pankki Oyj (Finland)	Subsidiary	4,233,110
Snoras Bankas	Conversgroup (Luxembourg) Holding Company (49.9 percent); ultimate owner: ZAO Conversbank (Russia)	Subsidiary	4,212,355
Siauliu Bankas		Domestic	1,350,522
Ukio Bankas		Domestic	3,018,765
UAB Medicinos Bankas		Domestic	426,605
Bayerische Hypo- und Vereinsbank AG	Bayerische Hypo- und Vereinsbank AG (Germany); ultimate owner: Unicredito Italiano Spa (Italy)	Branch	1,010,356
Nordea Bank Finland Plc Lietuvos skyrius	Nordea Bank Finland Abp (Finland); ultimate owner: Nordea Bank AB (Sweden)	Branch	3,248,080

Notes: The following changes in ownership structure occurred since end-2006. First, in February 2007, Mr. V. Antonov, Chairman of the Supervisory Board of Snoras Bankas and major shareholder of the international financial group Conversbank, acquired 68.65 percent of the registered share capital of Snoras Bankas. Mr. R. Baranauskas, Chairman of the Board, acquired and controls 25.1 percent of the registered share capital of the bank. Second, Danske Bank Group's purchase of Sampo Bank from Sampo Group was completed. Danske Bank is now the sole owner of Sampo Bank, thus it became an ultimate owner of Sampo Bankas.
Source: Bank of Lithuania.

Table I.3. Characteristics of Investment and Pension Funds, 2006
(End period)

	Collective Investment Undertakings (CIU)	Second-Pillar Pension Funds	Third-Pillar Pension Funds
Number of funds	11 management companies (29 CIUs, of which 17 equity funds, 8 fixed income funds, and 6 funds of funds).	7 investment management companies (21 funds) and 3 life insurance companies (9 funds).	6 funds
Total assets under management	LTL 832 million EUR 237.7 million	LTL 905 million EUR 220 million	LTL 74 million EUR 21.1 million
Portfolio	Mostly shares (63.87 percent); Lithuania (27 percent), EU (33.4 percent), non-EU (39.6 percent).	Mostly government bonds (43.46 percent) and CIU units (3.75 percent); Lithuania (16 percent), EU (82 percent), non-EU (2 percent).	Mostly CIU units (50.22 percent) and government bonds (15.06 percent); Lithuania (41 percent), EU (57 percent), non-EU (2 percent).
Participants	19,735	785,000 (55 percent of working population).	20,154 (1.3 percent of working population). 1/
Supervisory authority	Securities Commission	Securities Commission (investment management companies, LTL 770 million, 610,000 participants) and Insurance Supervisory Commission (life insurance companies, LTL 135 million, 170,000 participants).	Securities Commission

Source: Securities Commission.

1/ September 30, 2006.

Table I.4. Cross-Border and Cross-Sector Agreements
Concerning Supervision and Crisis Management

Year	International Agreements
Bank of Lithuania, Insurance Supervisory Commission, and Securities Commission	
2000	MOU on cooperation in the area of supervision of credit and financial institutions.
Bank of Lithuania	
1997	MOU between the Bank of Lithuania and the Central Bank of Russian Federation.
2000	MOU on co-operation in the area of supervision of credit institutions.
	MOU between Bank of Lithuania and Latvijas Banka on co-operation in the area of credit institutions' supervision.
	MOU on co-operation in Banking Supervision.
2001	MOU between the Bank of Estonia and the Bank of Lithuania on co-operation in the area of credit institutions' supervision.
	MOU between Lietuvos Bankas and the Bundesaufsichtsamt fur das Kreditwesen on co-operation in the area of credit institutions' supervision.
2002	MOU between the Bank of Lithuania and the National Bank of the Republic of Belarus.
	MOU on the amendment to the MoU on co-operation in Banking Supervision concluded on the day of December 7, 2000 in Vilnius.
2004	MOU on co-operation in the area of credit institutions' supervision.
2005	MOU between the Central Bank of Russian Federation (Bank of Russia) and the Bank of Lithuania in the field of banking supervision.
2006	MOU between Rahoitustarkastus in Finland and Lietuvos Bankas in Lithuania regarding cooperation in the supervision of Nordea Bank Finland Plc's branch in Lithuania.
	MOU between Financial Supervision Authority of Finland (Rahoitustarkastus) and the Bank of Lithuania regarding cooperation in the supervision of the Sampo Bank Group.
	MOU between the Bank of Lithuania and the National Bank of Ukraine.
	MOU between the Bank of Lithuania and De Nederlandsche Bank concerning their co-operation and exchange of information in the field of prudential supervision of banks and their cross-border establishments.
	MOU between the central banks of Estonia, Latvia, Lithuania and Sweden on financial crisis management at cross-border subsidiaries and branches.
Securities Commission	
1999	Agreement between the Securities Inspectorate of the Republic of Estonia, the Lithuanian Securities Commission and the Securities Market Commission of the Republic of Latvia.
2000	MOU on the Exchange of Information between the Lithuanian Securities Commission and Securities and Exchange Commission of France.
2001	Agreement on Technical Co-operation between Superintendency for Pension Funds of the Republic of Poland and the Securities Commission of the Republic of Lithuania.
2002	MOU between the Lithuanian Securities Commission and the Central Bank of Cyprus on Mutual Cooperation and Exchange of Information.
	MOU between the Polish Securities and Exchange Commission and the Lithuanian Securities Commission on Cooperation and Exchange of Information.

Table I.4. Cross-Border and Cross-Sector Agreements
Concerning Supervision and Crisis Management (Concluded)

Year	International Agreements
2003	IOSCO Multilateral MOU Concerning Consultation and Cooperation and the Exchange of Information.
	MOU between the Lithuanian Securities Commission and the Danish Financial Supervisory Authority.
2004	Multilateral MOU on the Exchange of Information and Surveillance of Securities Activities.
	MOU between the Lithuanian Securities Commission and the Romanian National Securities Commission.
2006	Participation Arrangement on the Regulatory Interpretation and Enforcement of Financial Reporting Standards between the Lithuanian Securities Commission and the International Organization of Securities Commissions.

Source: Bank of Lithuania; Insurance Supervisory Commission; and Securities Commission.

Appendix I. Estimated Effect of a Real Estate Shock

A back-of-the envelope calculation suggests that a 20 percent correction in the housing market may raise banks' NPL ratio by 1–1½ percent of loans from the current ratio of 1.0 percent. A 20 percent drop would approximately reverse the annual average compound house price increase in Vilnius for 2000–06. It would result in an increase in the ratio of NPLs to loans by approximately one percent of loans due to a direct effect (working through a contraction in the construction and real estate sector), and by 0.10–0.51 percent of loans due to an indirect wealth effect working through household spending (text table).

Effect of a 20 Percent Decline in House Prices 1/

	Wealth Effect of 0.02	Wealth Effect of 0.004
Indirect wealth effect (effect on household consumption)		
In millions of litai	-699.49	-139.9
As a percentage of 2006 GDP	-0.88	-0.18
Impact on ratio of NPLs to loans		
Impact of direct effect	1.07	1.07
Impact of indirect wealth effect	0.51	0.1
Total impact on ratio of NPLs to loans	1.58	1.17

1/ Compound annual growth rate of housing prices in Vilnius between 2000 and 2006.
Source: IMF staff calculations.

The direct effect assumes historical averages for the transmission of the house price increase to NPLs. During 2001–05, on average, a 10 percent annual house price increase was associated with 4.5 percent growth in the nominal value added of the real estate sector. In turn, a 10 percent increase in overall nominal value added was, on average during 2002–05, associated with a 5.8 percentage point decrease in the overall NPL ratio. We assume that this elasticity also applies to the real estate NPL ratio, since a breakdown of NPL is not available. Assuming that the share of real estate loans in total NPL is 20.2 percent—the same share as in total loans—this implies that the overall NPL ratio will rise by 1.07 percent.[8]

The indirect wealth effect assumes historical averages and cross-country experiences. Housing wealth is estimated as the product of the stock of housing per capita in 2004 (24.97 square meters), the population in 2005 (3,585,906), and average house prices in Lithuania in 2006 (LTL 1953 per square meter). A 20 percent housing price decline would reduce housing wealth by 20 percent. Cross-country evidence for non-Anglo Saxon countries suggests that a LTL 100 change in housing wealth should reduce consumer spending by LTL 2. The BOL estimates an effect of only LTL 0.004 because only a low share of

[8] 1.07=20 percent house price increase*0.45 elasticity of real estate value added to percent change in housing prices * 0.58 elasticity of real estate NPL to percent change in real estate value added*0.202 share of real estate NPL (incl. construction) in total NPL.

consumer loans is secured by real estate. Given this range for the elasticity, a 20 percent housing price decline would thus reduce consumption by LTL 139.9–699.5 million, or 0.18–0.88 percent of GDP. Given the average elasticity of the NPL ratio to nominal GDP growth in 2002–05 (0.58; see above), this implies an increase in the NPL ratio of 0.10–0.51 percentage points.

II. Income Tax Reforms to Improve Labor Market Outcomes

A. Introduction and Summary

18. **Measures to encourage labor force participation could help ease the tightness in Lithuanian labor markets.** During 2006, vacancies increased from ¾ to 1½ percent of the labor force. As the unemployment rate fell to 5½ percent of the labor force, real wage growth accelerated to 15 percent. However, despite an increase in the labor force, participation rates remain relatively low, as do employment rates, especially among the low skilled and other workers in the lower portion of the earnings spectrum.

19. **Hence, personal income tax reforms should take into account their impact on labor market incentives.** The personal income tax (PIT) rate was lowered from 33 to 27 percent on July 1, 2006 (this was the first rate reduction since the flat tax was introduced in 1994). A further reduction to 24 percent is to occur on January 1, 2008. Despite these reductions—both actual and proposed—calls for additional cuts in the PIT are continually made. Under current budgetary conditions, a PIT rate reduction beyond the planned 24 percent is untenable. Moreover, and this is the key message of this paper, a further across-the-board reduction, while narrowing tax wedges all along the earnings spectrum, may fail to take full advantage of the opportunity to target rate reductions. A case can be made that focusing on reducing the tax wedge of low-earning workers would be particularly valuable because it would improve their labor market participation while channeling scarce budgetary resources to provide income support where it is most needed.

20. **Recent empirical economic research has strengthened the case that targeted tax reforms can increase the reward from work for low-income workers.** The research also concludes that such reforms, if implemented as an integral part of a sound fiscal and tax framework, can improve labor market outcomes. Differences in labor market institutions[9] and aspects of the structure of taxes and benefits can explain differences in labor market outcomes (Nickell and Layard, 1999; Nickell, Nunziata and Ochel, 2005; and Elmeskov, Martin and Scarpetta, 1998). The statistically significant impact of taxes wedges is among the most robust findings in the literature. For OECD countries, Bassanini and Duval (2006) find that a 1 percentage point narrowing of the labor tax wedge for an average production worker would lead to a 0.28 percentage point fall in the unemployment rate. This result is consistent with estimates for the EU-15 states. For example, the European Commission (2004) finds that a 1 percentage point increase in the tax wedge would lead to a 0.25 percentage point fall in the employment rate. Bassanini and Duval (2006) also find

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[9] These include, inter alia, aspects of collective bargaining, the ease of hiring and firing, and active labor market programs.

significant positive relationships between the tax rate and employment rates for various segments of the population, including young people. These results are reflected in the revised OECD job markets strategy (OECD, 2006a and 2006b). Focusing on the low-skilled labor force in the OECD, Knabe, Schöb, and Weimann (2006) find that a 1 percentage point expansion of the tax wedge is associated with a 0.26 percentage point rise in unemployment rates. Such results extend to recent European Union (EU) entrants. Ederveen and Thissen (2004), using data from 17 OECD countries and 4 of the Central and Eastern European states (CEE), find a statistically significant positive relationship between unemployment and the tax wedge for the average production worker. Vork and others (2006), using a panel consisting exclusively of the eight CEE states (CEE-8), find that a 1 percentage point narrowing in the tax wedge for low-wage earners is associated with a rise in overall employment rates in these countries of 0.2–0.7 percentage point.[10] Using a different approach, Fabrizio (2006) employs CEE-8 data and finds coefficients of comparable magnitude.[11]

21. **This paper investigates the scope for further narrowing the tax wedge in Lithuania by augmenting general PIT rate reductions with an earned income tax credit (EITC) program.** This approach can have the advantage of preserving the flat-tax-rate structure, while narrowing the low-wage tax wedge through a separate means-tested income maintenance program, dependent on the level of earnings and administered through the income tax system. The EITC would either substitute for or complement existing poverty programs. In terms of targeting benefits to low-income groups through the tax system, it is superior to using either general exemptions under the PIT or exemptions of basic goods under the value-added tax (VAT) and other sales taxes (where, in both cases, all earners benefit). To finance the EITC, the no-tax amount under the PIT would be reduced, and a number of base-broadening moves would need to be adopted, including removing deductions (for mortgage interest) and eliminating preferential treatments (for bank and bond interest income, pension income, certain realized capital gains, and income of independent businesses

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[10] Their coefficient estimate of 0.2 is based on fixed-effects estimates, while the 0.7 coefficient estimate is based on pooled ordinary least squares (OLS). Because of the limited variation across the CEE-8 countries in many measures, it could be argued that the fixed effects capture the effects of time-invariant features of interest, so that the OLS estimates are more appropriate (see Allard and Lindert (2006)).

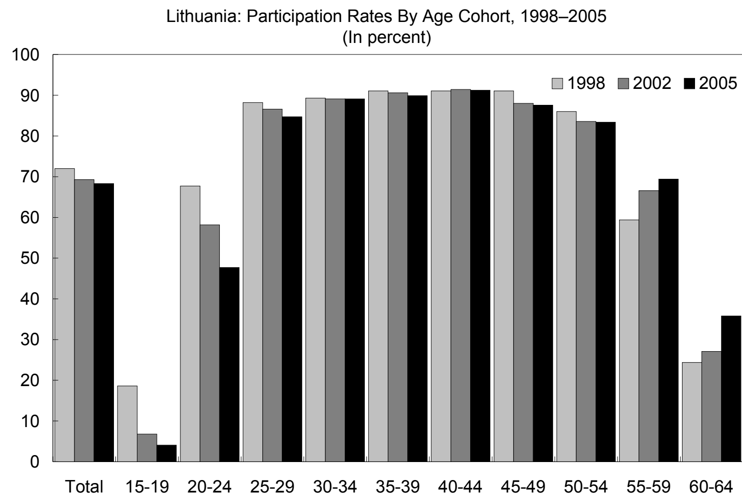
[11] There is also evidence that the tax wedge interacts with other institutional features, for example, the relative size of statutory minimum wages (Bassanini and Duval, 2006) and the generosity of unemployment benefits (Belot and van Ours, 2004). Vork and others (2006) conclude that, although labor markets may be generally more flexible in the CEE-8, the tax wedge still materially influences labor market outcomes in these countries.

and professionals). These base-broadening measures would also improve the efficiency and fairness of the tax system.

22. **The paper is organized as follows.** Section B briefly reviews key labor market characteristics and tax burdens in Lithuania within a regional context. Section C presents the main design characteristics of an EITC and investigates the affordability of a simple illustrative EITC policy. This section also discusses possible accompanying base-broadening measures. Section D concludes.

B. Labor Market Characteristics and Tax Burdens

23. **While labor market outcomes have broadly improved over the past decade, participation and employment rates for the young and low skilled are low.** Table 1 shows substantial variation in participation and employment rates not only in the enlarged EU, but even within the CEE-8. Overall participation and employment rates in Lithuania are broadly comparable to the CEE-8 and EU-15 averages, but both can be considered to be low. These rates are particularly low for the young and low-educated, groups that have lower incomes and a weaker attachment to the labor force. The employment rate for young people in Lithuania (21.2 percent) is almost half the EU-15 average, and over 6 percentage points below the CEE-8 average. Similarly, the low-educated employment rate



(15.1 percent) is over 20 percentage points lower than the EU-15 average, and about 5 percentage points below the CEE-8 average. The overall participation rate fell in Lithuania by just under 4 percentage points between 1998 and 2005 (text figure), while it remained approximately constant on average for the CEE-8 and trended upward in the EU-15 (up almost 3 percentage points over 1998- 2005) and the OECD (up about 2 percentage points). As the text figure indicates, the decrease in Lithuania was particularly strong for the younger cohorts, while participation for the 45–54 age group also fell.

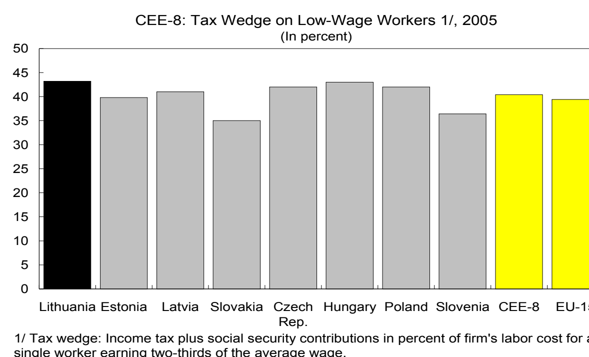
Table II.1. Selected Countries: International Comparison of Selected Labor Market Statistics, 2005
(In percent)

	Labor Force Participation Rate 15 - 64	Employment Rate Total 15-64	Young 15-24	Elderly 55-64	Low educated 1/
Lithuania	**68.4**	**62.6**	**21.2**	**49.2**	**15.1**
Czech Republic	70.4	64.8	27.5	44.5	15.6
Estonia	70.1	64.4	29.1	56.1	24.0
Hungary	61.3	56.9	21.8	33.0	21.2
Latvia	69.6	62.3	32.6	49.3	28.1
Poland	64.4	52.8	22.5	27.2	17.0
Slovakia	68.9	57.7	25.6	30.3	9.1
Slovenia	70.7	66.0	34.1	30.7	31.6
CEE-8	68.0	60.9	26.8	40.0	20.2
EU-15	71.0	65.2	39.8	44.1	35.4
OECD	70.3	65.5	43.0	51.8	...
Australia	75.5	71.6	63.6	53.7	...
Japan	72.6	69.3	40.9	63.9	...
Mexico	61.8	59.6	43.7	52.5	...
United States	75.4	71.5	53.9	60.8	...

Sources: Participation and employment data for the CEE-8 and EU-15 from Eurostat database. For other countries, data from OECD Employment Oulook 2006. Statistics for CEE-8, EU-15, and OECD are arithmetic mean.

1/ Maximum educational attainment is lower secondary (UN levels ISCED 0 - 2).

24. **Tax wedges on low-income workers are wide, reflecting the combination of high statutory PIT rates and large employer and employee contributions to social funds**. The text figure shows that the tax wedge in most CEE-8 countries is wider than the average of the EU-15.[12] The wedge for Lithuania, at almost 41 percent, is slightly wider than the

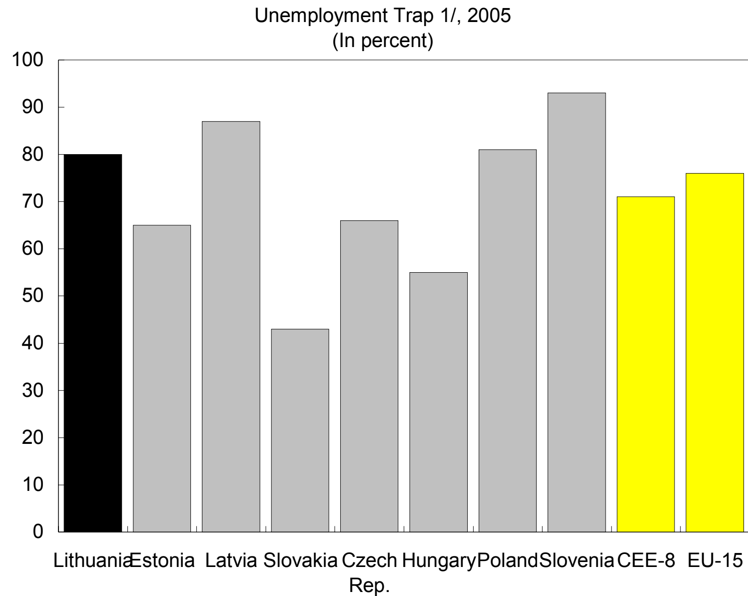


1/ Tax wedge: Income tax plus social security contributions in percent of firm's labor cost for a single worker earning two-thirds of the average wage.

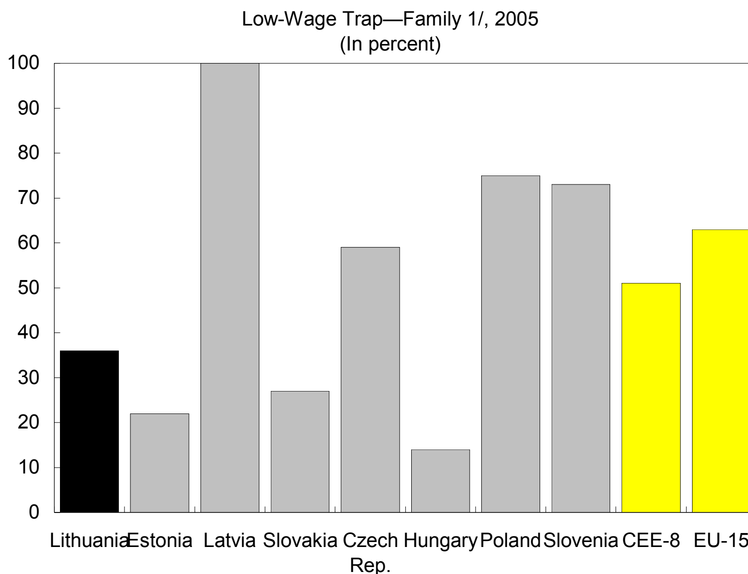
[12] Lithuania, like several others in the first generation of flat-tax adopters, introduced the tax at a rate near the top of the previous progressive rate structure. While the basic allowance was also raised, it remained low by international comparison, so that many lower-income workers faced increases in average and marginal tax rates.

average for the new member states.[13]

25. **The combined effect of the tax system and social benefits programs can widen tax wedges even more.** As shown in the text figure, the implicit tax rates in moving out of unemployment or in moving to a higher-paying job can be high (these cases are often referred to as "unemployment trap" and "low-wage trap", respectively). In Lithuania, a lower-wage worker moving from short-term unemployment into employment faces an implicit tax rate of about 80 percent on earnings in the job, taking into account taxes, social contributions, and lost unemployment benefits. While not the largest in the CEE-8, the unemployment trap exceeds the CEE-8 and EU-15 averages (text figure above). Similarly, a low-wage worker in a single-earner household with two children faces a significant implicit tax rate of 36 percent in taking a higher-paying job, when taxes and lost family allowances and other benefit payments are taken into account (text figure below).



1/ Unemployment trap: Combined effect of taxes paid and unemployment benefits lost in moving out of unemployment for a single worker earning two-thirds of the average wage.



1/ Low-wage trap: Combined effect of extra taxes and lost benefits for a single-earner family with two children in moving to a job paying two-thirds of the average wage from a job paying one-third of the average wage.

[13] The tax reform of 2006, which lowered the tax rate from 33 percent to 27 percent and increased the no-tax amount, narrowed the tax wedge by about 3 percentage points.

While this low-income trap is less onerous in Lithuania than in other EU countries and has shrunk recently, it still represents a significant potential disincentive to further labor market activity.[14]

C. An Earned Income Tax Credit

26. An EITC policy could not only be affordable in the context of the Lithuanian authorities' tax reform plan, but would also be effective in narrowing the tax wedge facing low-income workers. The authorities intend to lower the PIT rate to 24 percent and are considering in addition an increase in the no-tax amount. These measures will reduce the tax wedge for all workers, but the impact on low-wage workers will be limited, constrained by the revenue requirement from the PIT. An alternative approach would be to introduce a progressive rate schedule under the PIT, by which lower-income taxpayers would face a marginal tax rate reduced further beyond 24 percent, and higher-income taxpayers would face a higher rate, to maintain the revenue yield of the tax. However, the scope to ease low-income tax burdens with this approach is also limited, if it is further required that all taxpayers receive a cut in their statutory tax rate relative to the 2007 level.[15] An EITC, however, could maintain the current flat-tax structure of the PIT, better target the tax burden reductions to those workers in the lower end of the earnings spectrum, and meet revenue goals.[16]

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[14] Reforms to benefit programs reduced the low-wage trap for families from 93 percent to 36 percent between 2003 and 2005. However, benefit reforms increased the unemployment trap in Lithuania from almost 49 percent to 80 percent from 2003 to 2005.

[15] For example, a revenue-neutral two-rate tax reform for 2008 would involve rates of 22 percent and 26 percent (with the lower rate applying to incomes up to monthly earnings level of LTL 1,200) and a monthly no-tax amount of LTL 400 (up 25 percent from the current level). This reform would lower the average tax rate by 1.3–2.4 percentage points for those earning below the median wage, relative to a uniform 24 percent tax rate.

[16] The EITC falls into the general set of wage subsidy and making-work-pay policies. An EITC is typically subject to a family-income based means test, participation is usually not time-limited, and the credit is integrated into the income tax regime. The Working Families Tax Credit in the United Kingdom, the EITC in the U.S. and the In-Work Tax Credit in Belgium are examples of this type of program. See Blundell (2005) for more discussion of EITC and OECD 2006a for a discussion of making-work-pay policies. Saez (2002) identifies several circumstances where an EITC is superior to alternative policies. EITC-type policies can have a number of objectives, which would help determine the optimal values of program parameters. The focus in this discussion is on the goal of lowering the tax wedge.

27. **Several illustrative EITC policies that Lithuania could implement are presented in Table II.2.**[17] The first column characterizes the current tax regime, while the next two columns present two possibilities for 2008: Both are characterized by a flat-tax-rate reduction to 24 percent. While the first maintains the no-tax amount at its current level of LTL 320 per month, the second increases the no-tax amount to LTL 400. Three EITC options are presented in the next three columns. They differ mainly in their impacts on the PIT liabilities of workers in the middle of the earnings distribution. In all cases, the PIT rate is reduced to 24 percent. A worker must earn at least LTL 200 per month to qualify for the EITC program. It is assumed that the basic credit is LTL 100 per month, and that this is refundable to the worker. Between earnings of LTL 200 and LTL 350 per month, the credit operates so that after-tax earnings of the worker remain LTL 100 higher per month than before-tax earnings; that is, the worker faces a zero marginal tax rate in this range. Beyond LTL 350 per month, the tax credit is phased out. Under options I and III, the credit is completely phased out at an earnings level of LTL 1,000 per month, and the worker joins the regular PIT regime. In option II, the credit is phased out at a higher earnings level of LTL 1,500 per month. Option III differs from option I in that, in addition, a second tax rate of 20 percent is introduced under the PIT, applying to earnings under LTL 1,400 per month; earnings beyond this level are taxed at 24 percent, the tax rate applied in the other two options.[18] The options also differ in the no-tax amount for the PIT: under options I and II, this amount is reduced from its current level to LTL 280 per month; in option III, it is reduced further to LTL 250. The no-tax amount is reduced to help finance the reform.[19]

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[17] Calculations of revenue yield are based on the actual distribution of PIT payments for 2005, and are conservative in that they assume no behavioral effects (on participation rates, hours worked, size of the informal sector, migration) arising from the introduction of the EITC. It is also assumed that the only deduction taken is the no-tax allowance (which in any case constitutes over 80 percent of all deductions), and that ½ of the individuals who reported earnings under LTL 600 per month in 2005 would meet the eligibility requirements for the EITC.

[18] The parameters of the phase-out range of the EITC determine the marginal effective tax rate (METR) of workers whose income falls in this range. As given in Table 2, the METRs under the three options range from 35 percent to 42 percent, higher than the marginal tax rates (but not average tax rates) faced by any nonparticipant in the EITC. This is an avoidable consequence of phasing out the credit.

[19] The reduction in the no-tax amount has the effect of shifting more of the tax burden to higher-earning taxpayers (without increasing their marginal tax rate). While all taxpayers pay more taxes when the no-tax amount is increased, the impact on lower earners can be offset through increases in the EITC.

Table II.2. Lithuania: Earned Income Tax Credit Options
(In litai per month; unless otherwise specified)

	2007 Tax Regime	2008 1/ Maintain no-tax amount	2008 1/ Increase no-tax amount	EITC 2/ Option I	EITC 2/ Option II	EITC 2/ Option III
PIT rate (percent)	27	24	24	24	24	24
No-tax amount	320	320	400	280	280	250
EITC						
Earnings floor for qualification	...	...	...	200	200	200
Basic credit	...	...	...	100	100	100
Phase-out begins	...	...	...	350	350	350
Phase-out complete	...	...	...	1,000	1,500	1,000
Lower PIT rate (percent)	...	...	...	...	...	20
Lower-rate earnings ceiling	...	...	...	...	...	1,400
Marginal tax rate below phase-out (perc	...	...	...	0	0	0
Marginal tax rate during phase-out (per	...	...	...	42	35	38
Revenue (percent of GDP) 3/	5.7	5.0	4.7	4.6	4.3	4.1
Tax liability						
Earnings level (litai per month)						
800	130	115	96	89	57	73
900	157	139	120	131	91	112
1,000	184	163	144	173	126	150
1,100	211	187	168	197	161	170
1,200	238	211	192	221	196	190
1,300	265	235	216	245	230	210
1,400	292	259	240	269	265	230

Sources: Authorities; and staff calculations.

1/ The reduction by 2008 in the PIT rate to 24 percent has been announced. The two scenarios differ in the accompanying no-tax amount.
2/ All three options incorporate the PIT rate reduction to 24 percent, but differ in the no-tax amount. Option III, in addition, introduces a second, lower, PIT rate of 20 percent, applied to taxable earnings below LTL 1,400 per month.
3/ Calculations based on the distribution of taxable income from 2005 tax return data, and assuming no behavioral response to the tax changes.

28. **Under all of the EITC options, all taxpayers would be paying less than under the current (2007) tax regime.** Monthly tax liabilities for different earnings levels below LTL 2,000 are given in Table II.3. Taxes (and therefore the tax wedges) are reduced dramatically for lower-income workers: where income tax liabilities are negative, the operation of the EITC has the effect of eliminating the PIT on earnings and in addition offsetting some portion of the tax wedge reflecting social contributions. However, not all taxpayers receive a tax reduction relative to the authorities' 2008 plan under all options. Consider, for example, the case where the no-tax amount is increased to LTL 400 per month in 2008 (third column of Table II.2). Under EITC option I, which raises approximately the same revenue as this scenario, middle-income earners would pay more tax, as shown in the lower portion of Table II.2 (which reproduces the relevant portion of Table II.3), of up to 20 percent (at monthly earnings of LTL 1,000), and at least 10 percent more in the earnings range LTL 1,000–LTL 1,600. This increase in middle-income tax liabilities relative to the low-tax scenario for 2008 can be attenuated or largely eliminated either by increasing the EITC phase-out earnings level (option II), or by introducing a progressive PIT structure (option III). Introducing a second PIT rate has a revenue cost of about 0.6 percent of GDP, while extending the EITC phase-out range has a cost of about 0.4 percent of GDP. In this

regard, option II appears to dominate option III, because it reduces middle-income tax liabilities at lower revenue cost.

Table II.3. Lithuania: Personal Income Tax Liabilities on Earnings at Different Earnings Levels 1/
(In litai per month)

Monthly Earnings	2007	2008		EITC		
		Maintain no-tax amount	Increase no-tax amount	Option I	Option II	Option III
200	0	0	0	-100	-100	-100
300	0	0	0	-100	-100	-100
400	22	19	0	-79	-83	-81
500	49	43	24	-37	-48	-42
600	76	67	48	5	-13	-4
700	103	91	72	47	22	35
800	130	115	96	89	57	73
900	157	139	120	131	91	112
1,000	184	163	144	173	126	150
1,100	211	187	168	197	161	170
1,200	238	211	192	221	196	190
1,300	265	235	216	245	230	210
1,400	292	259	240	269	265	230
1,500	319	283	264	293	293	254
1,600	346	307	288	317	317	278
1,700	373	331	312	341	341	302
1,800	400	355	336	365	365	326
1,900	427	379	360	389	389	350
2,000	454	403	384	413	413	374

Source: Staff calculations.

1/ Individual tax liability assuming the basic no-tax amount is taken, but with no other deductions or exemptions.

29. **To accompany the EITC, there is scope to broaden the tax base**. Broadening the base by removing exemptions and deductions would be desirable in its own right, to improve the efficiency and fairness of the tax system. These measures should be adopted to manage the overall impact on the budget of the reform program, either to replace revenue foregone from other measures, to enhance revenue, or to permit further reduction in tax rates. Possible measures include:

- Improve the tax treatment (both PIT and social contributions) of independent activities. Many businesses currently opt for a simplified tax regime and, in addition, pay only nominal social contributions for pensions. Tax on independent activities raised only LTL 100 million in 2005 (equivalent to about 2 percent of PIT revenue, and 0.15 percent of GDP). Larger businesses and professionals should be brought into the normal PIT and social security contributions regimes, and the system of business certificates, currently utilized by over 100,000 taxpayers, who together paid tax equivalent to 0.02 percent of GDP in 2005, should be restricted.

- Reduce or remove income tax deductions and exemptions. Eliminate mortgage interest deductibility (revenue cost in 2005 of LTL 40 million),[20] and bring bank and sovereign bond interest into the tax net (revenue from interest income in 2005 totaled only LTL 1 million).

- Bring income from agricultural activities more fully into the income tax net. Currently, the sale of agricultural products is exempt. In 2005, about 280,000 tax filers took advantage of this exemption, sheltering from tax income equal to 2.6 percent of GDP.

- Improve the tax treatment of capital gains. Currently, longer-term gains are untaxed; revenue from capital gains in 2005 was LTL 41 million, compared with revenue of LTL 127 million from dividends.

- Bring pensions more fully into the PIT net. The current treatment is to deduct pension contributions and exempt ultimate pension benefits. However, if contributions are deductible,[21] the appropriate treatment is to tax pensions.

- Under the VAT, eliminate special treatments of basic goods and services introduced to improve the fairness of the tax. The goal of increasing the real incomes of lower-income households is more effectively addressed through the design of the income tax, including the EITC. Currently, a number of goods and services are taxed at preferential rates, at a revenue cost of about 0.3 percent of GDP. About half of this is accounted for by the preferential treatment of meat, poultry, and hotel accommodation.

These measures should be accompanied by improvements in tax administration that, inter alia, effectively distinguish between labor income and other types of income that are taxed at a lower rate. Where making this identification proves difficult, consideration should be given to taxing that income source at the same rate as labor income.

30. **Also, a cap on earnings subject to pension contributions can narrow the high-earnings tax wedge and improve labor market incentives for the highly skilled.** The business community and others in Lithuania have expressed concern about the tax wedge on

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[20] A partial reform was introduced for the 2006 tax year, limiting the mortgage interest deductibility to one house.

[21] While employee contributions are not deductible, employer contributions are, and make up the bulk of the total.

high earners, and the authorities recently formed a working group to study the impact of narrowing this wedge by capping the earnings subject to social contributions.[22] Regionally, most countries (but not all—exceptions include Estonia, Finland, and Slovenia) cap earnings subject to social contributions. Without a cap, the tax wedge—that is, the combined marginal tax rate faced by high-income earners—in Lithuania for 2007 approaches 61 percent. This represents a significant disincentive to labor effort, and can also encourage migration of highly-skilled workers and jobs. In addition, given that there is a cap on pension entitlement under the public pension system, a cap on contributions brings the system closer to actuarial fairness. The working group found that capping earnings subject to social contributions at a level of five-to-seven average wages would entail a consolidated budget revenue loss of less than 0.1 percent of GDP, when indirect effects are taken into account.[23] This loss can be reduced by limiting application of the ceiling to pension fund contributions (with a combined employer and employee rate of 26.2 percent, this would narrow the high-income tax wedge to 35 percent), and by bringing independent businesses and agricultural suppliers more fully into the contributions net.

31. **EITC implementation challenges are important, but can be addressed.** First, design and evaluation depend crucially on the goals of an EITC. While the labor market impacts have been highlighted here, this should be balanced with other goals, including the desire to augment incomes of low-income families, and to draw workers from the informal to the formal sector of the economy. Second, since economic decisions are made, and resources are shared, on a family basis, eligibility and the magnitude of payments should depend on family circumstances. This would require collecting information on family circumstances that goes beyond what is currently available, as the PIT unit currently is the individual. In addition, it will likely require that more workers file PIT returns.[24] Third, procedures will need to be developed to pay out the credit periodically throughout the year, rather than as a single lump sum one time during the tax year. Fourth, how credits and phase-out amounts should depend on the number of children in the household will need to be determined. Finally, the challenges of accurately verifying the incomes of the self-employed for purposes of the EITC will need to be addressed.

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[22] The working group was formed under the Minister of Social Security and Labor Decree No. A3-332, dated December 2006.

[23] Indirect effects include increased corporate and personal income tax and consumption tax revenue, as well as expenditure savings from decreased contributions payments by the government in its role as employer.

[24] Currently, only about a third of taxpayers file end-of-year tax returns.

D. Concluding Remarks

32. **The analysis establishes that there is scope to adopt further PIT reforms that could improve labor market outcomes.** Relative to the proposed tax reforms, an EITC can better target income tax reductions to lower-wage workers, removing disincentives to labor market participation and the search for higher-earnings jobs. While the EITC has a number of other attractive features, it also presents challenges, including administrative realignments, that will need to be resolved in the design of the program. Measures to broaden the tax base that could accompany this reform would improve the efficiency and fairness of the tax system in their own right.

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