

Belgium: Selected Issues

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BELGIUM

Selected Issues

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EXECUTIVE SUMMARY

The staff's analytical work associated with the 2005 Article IV Consultation of Belgium covers developments in the residential real estate market and the implications of labor and product market reforms. House prices have risen substantially in Belgium as elsewhere and residential construction has contributed significantly to growth. A slowdown in price growth is likely but will affect the economy mainly through the construction sector as wealth effects on consumption are largely absent and the financial system is robust. Labor and product market reforms could boost potential output significantly over the long run. The impact of labor market reforms is comparatively larger given the important remaining rigidities. Synchronization of reforms between product and labor markets would mitigate most transition costs of labor market reform. With Belgium a small player, increased output will easily be sold abroad, diminishing the need for international coordination of the timing of reforms.

How risky are real estate price developments in Belgium? Real estate prices have risen sharply in Belgium over the past few years, in between rates observed in the UK and France. There is clear evidence of a boom and the probability of a slowdown or reversal, at least in real terms, has increased. Aside from fundamentals and low interest rates, changes in borrowing behavior, lending practices and fiscal incentives have also contributed to price growth. Some of these factors have been temporary and interest rates appear to be beyond their historic lows. Nonetheless, with the financial system robust and no notable evidence of equity withdrawal, the macroeconomic implications of a price reversal are unlikely to be dramatic and will mostly affect the economy through the construction sector. Still, there is scope for further reducing the vulnerability of the economy by providing better education to households about the consequences of their choices; improving supervision; expanding mortgage backed security markets; removing policy distortions and improving the availability of statistical information on housing related indicators.

Macroeconomic impact of labor and product market reforms. Simulations with the Fund's Global Economic Model, (GEM) quantify the impact of reforms of labor, goods and services markets in Belgium. Overall, raising competition in these markets to the average observed in the non-euro area EU15 would boost output by 12 percentage points in the long run. With labor markets relatively more distorted in Belgium, about half of this increase would stem from labor market reform. Synchronization of reforms in labor and product markets eases transition costs to the point where there is no transitory loss in output. This is largely due to the fact that Belgium is very open and a price taker so that its reforms reduce inflation only modestly, thus raising real interest rates only moderately. In addition, output is easily sold abroad. Hence, while coordination of the timing of reforms with the rest of the euro area would further help the transition, going it alone will permit Belgium to reap the benefits with limited transition costs.

I. HOW RISKY ARE REAL ESTATE PRICE DEVELOPMENTS IN BELGIUM?¹

A. Introduction

1. **As elsewhere in industrialized countries, residential real estate prices in Belgium have risen considerably in recent years.** The general view is that housing prices in the 90's increased rapidly in several countries, driven by a low interest rate environment and increasingly flexible mortgage markets. Countries such as the UK, the Netherlands, Spain, Australia, Ireland, and the USA have experienced strong price increases in the late 90's and early 2000's and the recent slowdown in housing prices in the UK, the Netherlands, and Australia, and the accompanying slowing in consumption in these countries raised concerns about the impact of housing on the macro economy (Figure 1).

2. **The purpose of this paper is to** (i) evaluate whether price increases in Belgium are excessive; (ii) assess the household and bank balance sheets and their vulnerability to a slowdown in housing prices; (iii) identify differences in real estate markets between Belgium and other countries; (iv) analyze policy and institutional factors that may have contributed to housing price developments in Belgium and identify potential policies that are available to avert a build up of pressures.

B. House Price Developments in Belgium

3. **House price increases in Belgium, even though strong and accelerating in 2004, have been somewhat less dynamic than in the most buoyant countries such as the Netherlands and the UK** (Figure 2). Real estate cycles in countries such as the UK have been shorter and were defined by rapid acceleration followed by a rapid reversal in prices. Belgium experienced a more gradual growth in prices than in most countries. However, a feature that distinguishes prices in Belgium from other countries is the upward trend, which has lasted for two decades. After the housing trough in Belgium in 1985, which coincided with the housing trough in the Netherlands, these two countries experienced a prolonged period of moderate and consistent rises in real housing prices for about a decade. In the mid 90's however, prices in the Netherlands accelerated, whereas Belgium continued on the same moderate trajectory for another decade. The rapid price gains in the Netherlands of the late 90's cooled off in the recent years. In contrast, Belgium experienced a pick up in prices in recent years. In 2004, apartment prices on average increased by 14.5 percent and the price of medium and small sized homes increased by 6.8 percent, in nominal terms. While inflation over the same period was only 1.9 percent. The jump in apartment prices in 2004 may have been partially due to the fiscal amnesty operation in 2004, which provided incentive for households to repatriate their foreign financial assets, and were probably partly reinvested in real estate. Anecdotal evidence from various newspaper articles suggest that prices moderated in 2005. According to press reports, nominal prices for apartments and homes

¹ Prepared by Sibel Yelten

increased by 5.0 percent and 8.3 percent, respectively, while inflation over the same period is projected to be 2.4 percent.

4. **To measure the extent of price increases in the Belgian real estate sector we use the Helbling and Terrones methodology.**² Helbling and Terrones use a standard event study to analyze house prices in 14 industrialized countries from 1970 to 2002. They identify boom and bust cycles. They look at all episodes of real price increases and decreases and define a “bull market” as a market with increasing and a “bear market” as a market with decreasing prices. They define a “boom” as the top quartile of price changes in all bull markets and a “bust” as the bottom quartile of price changes in all bear markets. For example, as a result, a drop of 14 percent or more in real housing prices is defined as a bust. Price increases are measured as the peak-to-peak increases or, alternatively, as the cumulative eight-quarter pre-peak increases in inflation-adjusted housing prices. The rationale for comparing peak-to-peak housing price increases is to get a measure of above trend growth rather than capture a possible correction of an earlier bust.

5. **Using Helbling and Terrones’ methodology, price increases in Belgium have been considerable (Table 1).** Belgium experienced its last peak in the housing market in 1979 and last trough in 1985. If we use 2004 as a cut-off value, then the cumulative inflation adjusted housing price increase in Belgium since the previous peak has been 44 percent. This increase is larger than the 42 percent increase in the Netherlands, 41 percent in France, and 34 percent in the United States. However, it is less than the increase in the UK, Spain, and Australia, at 50 percent, 53 percent, and 61 percent, respectively. Further, the run up in prices in Belgium is larger than in previous housing price cycles. In the sample of Helbling and Terrones, average peak-to-peak increases during previous housing price booms have been 32.7 percent.

6. **Comparing cumulative price increases from trough-to-peak, Belgium again has experienced considerable price growth.** With an 86 percent increase since its last trough, Belgium leaves all other countries except the Netherlands behind. This increase is also a multiple of the historic sample of Helbling and Terrones, where the cumulative increase from trough-to-peak in all bull markets on average has been 11.3 percent and lasted for about 3 years.

7. **However, a mitigating factor is that these price increases happened over a long time period.** The housing cycle in Belgium has lasted for 19 years, which is comparable to the Netherlands (19 years) and Australia (12 years), but is significantly longer than other countries in the sample. For that reason a comparison of real estate prices in Belgium to the Netherlands, given also similar supply restrictions in both countries may be the most relevant comparison.

² Helbling (2005).

Table 1. Inflation-Adjusted House Prices Using Helbling and Terrones as a Benchmark

(Percent cumulative change as of end-2004)

	Peak-to-peak Increase	Trough-to-peak Increase	Cumulative two-year Increase 2002-04	Duration of Housing Price Boom (years)
Belgium	44	86	14	19
United Kingdom	50	82	24	9
Netherlands 1/	42	103	30	19
France	41	60	26	7
Spain	53	74	28	7
Australia	61	67	25	12
United States	34	40	13	10

Helbling and Terrones's sample (Average for 14 industrialized countries, 1970-2002)

(Percent cumulative change up to peak)

	Peak-to-peak Increase	Trough-to-peak Increase	Cumulative two-year Increase up to Peak	Duration of Housing Price Boom (years)
All bull markets	2.1	11.3	8.2	3
Booms only (1970-2002)	32.7		31.7	4
Booms only 70s	51.0		37.3	
Booms only 80s	28.4		31.2	
Booms only 90s	30.4		19.2	

Sources: Author's calculations; Helbling (2005); and BIS paper 21.

1/ Since prices in the Netherlands slowed down recently, the cumulative two year increase is calculated for 1998-2000

NB: Inflation adjusted real estate prices: BIS calculations using national data.

8. **Price development in rentals in Belgium have been significantly lagging housing price increases.** If housing prices are increasing more than rental property prices, this can potentially be a cause of concern, since distressed households would have difficulty to rent out property to cover mortgage payments. In Belgium, rental prices are controlled in the sense that during the length of a renting contract, rents can only be adapted for inflation. According to the HIPC index, the actual rent component has since 1995 increased on average by 2 percent per year in nominal terms, which is significantly below the house price inflation over the same period (Figure 3).

C. What are the Drivers of Real Estate Prices in Belgium?

9. **Changes in economic fundamentals explain to a large extent the prolonged increases in housing prices in Belgium.** There is a vast empirical literature estimating the determinants of house prices³. Table 2 shows the regression results of one such study, for

³ WEO, September 2004, Box 2.1 and Lamont and Stein (1999)

18 industrialized countries, including Belgium, for the time period 1971-2003⁴. According to these estimates, population growth, credit expansion, interest rates, and economic growth are the main determinants of real house prices. Further, house prices increases are serially correlated and show significant mean-reversion, when housing affordability deteriorates.

10. **An analysis of the regression results suggests that demographics, particularly changes in interest rates have been the main drivers of price changes in Belgium** (Table 3). Population growth increased from 0.16 percent per year to 0.38 percent per year from the 1970s to the 2000s. However, some of the increase in population is counterbalanced by a significant drop in growth. Belgium's real per capita GDP growth in the 1970s was 3.1 percent and dropped to 1.3 percent in the 2000s. However, the most important factor which has determined housing prices in Belgium, as in other countries, has been the dramatic drop in interest rates. As can be seen in the regression a one percent drop in interest rates can explain half a percentage increase in housing prices. This also indicates that in case of a interest rate increase housing prices would respond sensitively. Overall, using these regressions, over the time period of 1997 to 2003, only 8 percent of Belgium house price increases were not explained by fundamentals.

11. **Despite scarcity of data to track investor behavior in Belgium, speculation doesn't seem to be a large concern.** Housing transaction costs are very high compared to other countries, likely deterring speculation. Further, speculation in housing is less likely in a country where the majority of property is owner-occupied, as is the case in Belgium (Table 4). Nonetheless, in the UK where owner occupation is high speculation has been more of a problem.

⁴ WEO, September 2004, Box 2.1

Table 2. What Determines House Prices in Industrial Countries?
(Summary of empirical results, 1971-2003)
(18 industrial countries)

Explanatory Variables	Dependent Variable Real House Price (growth)
Lagged dependent variable	
Lagged real house price (growth)	0.521 [0.030] *
Reversion	
Lagged housing affordability ratio	-0.144 [0.021] *
Fundamentals	
Real disposable income (per capita, growth)	0.53 [0.119] *
Short-term interest rate (percent)	-0.507 [0.109] *
Real credit (growth)	0.109 [0.036] *
Lagged real stock price (growth)	0.033 [0.009] *
Population growth (percent)	1.74 [0.623] *
Bank crisis (dummy)	-2.426 [0.952] *

Source: IMF, WEO, September 2004.

Note: The symbol * denotes significance at the 1 percent level. Significance is based on robust standard errors.

Table 3. Developments in the Determinants of House Prices in Belgium
(In percent per year, average over decade, unless noted otherwise)

	1970s	1980s	1990s	2000s
Housing Affordability Ratio /1	0.81	0.66	0.72	0.83
Real GDP Growth (per capita)	3.06	2.01	1.81	1.29
Population Growth	0.16	0.15	0.29	0.38
Short term interest rates (first year in decade)	...	11.20	9.70	2.90

Source: Staff calculations, WEO.

1/ Ratio of Real house prices to (per capita) real income.

12. **In the United Kingdom, which experienced a run up of residential property prices, speculation may have been one of the causes of rapid price increases.** If investors are buying property with the sole purpose of reselling it for a profit (“flipping” property,) this can overheat markets. It is important to monitor investor behavior, since, if future price gain expectations prove to be wrong, investors are more likely to sell their investment than owner-occupiers. In the UK, the volume of “buy-to-let” lending as a percentage of total mortgage lending has increased from 3 percent of total lending in 1999 to around 7 percent in 2003. This ratio started to decline in the second half of 2004, coinciding with slowing appreciation of U.K. house prices.⁵

Table 4. Owner Occupation and Mortgage Debt

Country	Owner-occupation		Mortgage Debt/GDP
	Percent	Year of data source	2004
Australia	70	1999	74
United Kingdom	71	2004	73
United States	68	2002	65
Belgium	68	2001	30
Canada	66	2001	43
Finland	64	2001	38
France	56	2002	26
Sweden	49	2003	53
Denmark	51	2004	90
Netherlands	54	2002	111
Germany	43	2002	52

Sources: European Mortgage Federation (EMF); Ahearne (2005); Belgian authorities; and Scanlon and Whitehead (2004b).

D. The Role of Mortgage Credit and the Institutional and Policy Environment

13. **Developments in mortgage credit markets, the institutional environment, and policies influencing the real estate market play a role in price developments.** First, if the Belgium market is vulnerable to a slowdown or a reversal of prices in real estate markets, one would expect to see some evidence of these vulnerabilities in the economy, either evidence of excessive risk taking in households and banks, or a strong dependence of economic growth on the housing market. Second, if the risk taking behavior of households or banks has changed it would be important to understand the drivers of this change. Institutional or policy changes could have influenced such behavior.

⁵ Ahearne et al. (2005)

Has the risk preference of households and banks changed?

14. **Belgian households while conservative compared to other countries, have been borrowing more at riskier terms.** The average size of a mortgage loan for the purchase of an existing house has doubled since 1995 and reached almost €10,000 in 2004, a 9.6 percent increase relative to 2003. Further, households have been switching to flexible rate mortgages rapidly. The market share of flexible rate mortgages increased from 6 percent of total new mortgage loans in the period 1997-2001 to slightly more than 50 percent in 2004. This is a rapid shift in the risk profile and preferences of households and significantly increases the vulnerability of households' debt service levels to interest rate increases. In comparison, in the UK, a market where consumers are more familiar with flexible mortgage instruments⁶, 83 percent of total new mortgage loans in 1998 were variable rate loans and this ratio came down to 64 percent in 2004 (Figure 4).

15. **However, several factors mitigate the risk exposure of Belgian households.** First, flexible mortgage contracts in Belgium are significantly more conservative than in other countries, as a result of legal provisions that limit the frequency and the extent of rate revisions, and the possibility, of so called "accordion loans" which allow to extend the period of reimbursement to retain an unchanged monthly burden. Legal requirements are that rates may not be revised more than once a year, not by more than 1 percent per year on average in the first three years of the loan, and that a limit on the cumulated revision must be included in the loan contract with an upward limit not higher than the downward limit. The use of a cumulative cap of 3 percent is a standard practice. Further, Belgian households have less exposure to mortgage debt compared to other countries. For example, mortgage debt to GDP in 2004, in the Netherlands, the UK, and Australia was 105 percent, 75 percent, 74 percent, respectively, compared to 30 percent in Belgium and 26 percent in France (Table 4). Mortgage debt to GDP rose to 32 percent, in Belgium, in 2005.

16. **Nonetheless, in case of a sharp increase in interest rates the burden to households could increase significantly.** For example, one can calculate the impact of a rate increase in the theoretical but standard case of a variable rate mortgage with a cumulative cap of 1, 2, and 3 percent respectively on the up- or downward adjustment that can take place in the first, second and subsequent years of a loan. If one assumes, the worst case scenario, an upward revision of 1 percent in the first three years of the loan, capped at a cumulative 3 percent for the rest of the loan, the debt burden would increase by 27 percent from the fourth year onward. Given the actual levels of the 20-year fixed rate and variable rate with a 3 percent cap, such a rate revision would bring the monthly debt burden of the variable rate loan from 8 percent under (in the first year) to 17 percent above (from the fourth year onward) the burden of the fixed rate loan. Further, since the tax advantage of having a mortgage loan is front loaded the burden in later years may increase even further.

⁶ According to the completeness index of the European Mortgage Federation the UK receives a perfect score (100 percent) for information and advice on mortgage related products. Belgium is not included in the study, however the same index is 70 and 80 in France and Netherlands, respectively.

17. While households have been switching to riskier borrowing practices the exposure of Belgium banks to mortgage related risks has been increasing rapidly.

Mortgage loans in the Belgium banking system (including nondomestic loans) grew from €80 billion in 2000 to €147 billions as of September 2005. Further, the average loan-to-value ratio of new mortgage loans, a good indicator of the aggregate risk banks are facing, increased to 89 percent in 2004. In addition, it is important to note that this ratio would jump significantly if housing prices were to fall. As a comparison, in the UK and USA average LTV ratios of new loans are currently 75 and 80 percent respectively. Under the affordability test normally applied by Belgian banks, borrowers may devote no more than 33 percent of their income to housing costs. Loan-to-value ratios are not typically used; there are no regulations limiting the LTV ratio; it is relatively easy for the borrower to get more by adding a personal loan to the mortgage, thus borrowing over 100 percent of the assessed value.⁷

18. The increase in mortgage loans was partly driven by increased competition among banks to attract customers (Figure 5).

Similar to developments in other European countries, Belgium experienced a significant loan profile shift resulting from reduced recourse to bank credit by corporations. As a consequence, the percentage of loans to the corporate sector declined from 47.5 to 37.8 percent from 1999 to September 2005. Conversely, the percentage of loans to households increased from 45.3 to 52.6 over the same period. The pressure on banks due to the loss of business customers also becomes evident in the latest Survey of Bank Lending Standards. According to this survey, banks in the United States and Europe reported a significant easing of credit standards over the last two years. Banks listed concerns about competition from other sources of business credit as their primary reason for easing standards.

19. Heightened competition can also be seen in the decline in banks' commercial margin on mortgage loans and an easing of lenders' credit standards for housing loans.⁸

From an average of 1.5 percent in 2003, the margin relative to a one-year government bond declined to 1.0 percent in early 2005. Further, according to the Belgian results of the Euro system's Bank Lending Survey, an easing of lenders' credit standards for housing loans took place.

20. Still, risks to the Belgium banking system are limited compared to other countries, because of the relative low level of mortgage loans in the aggregate and banks' strong financial position. Residential mortgage debt, extended by Belgian banks to residents and nonresidents, as a percent of GDP increased from 32 percent of GDP in 1999 to 50 percent in 2005, but is still lower than in other countries. Further, Belgium banks have a strong financial footing and a lower exposure to mortgage risks than other international banks (Table 5). In some cases, property lending exceeds both the market capitalization and several times its equity capital of some banks. Nonetheless, the conventional market view is

⁷ K. Scanlon and C. Whitehead (2004a) and anecdotal information provided by banks.

⁸ National Bank of Belgium (2005), Financial Stability Review.

that most of these banks have ample capital to withstand the risks they are facing. In addition, results of stress tests on the Belgium banking, conducted in the context of the 2005 FSAP, indicate considerable resilience against shocks, even if the system undergoes a combined macroeconomic shock.

Table 5. Selected Large Mortgage Lenders

Entity Name	Country	Mortgage Loans	% of total Assets	Multiple of Market Cap	Multiple of Equity	Rating 2/
HBOS PLC	United Kingdom	326.6	38.0	5.1	9.9	B +
Nationwide Building Society	United Kingdom	143.7	77.0	...	17.1	B
HSBC Holdings PLC	United Kingdom	64.0	5.0	0.3	0.7	B +
Alliance & Leicester PLC	United Kingdom	53.6	56.0	6.9	15.7	B
Northern Rock PLC	United Kingdom	51.8	63.0	8.2	17.7	B -
ING Group NV	Netherlands	249.7	21.0	3.8	7.1	B +
ABN Amro Holdong NV	Netherlands	145.0	18.0	3.3	7.5	B
Fortis	Belgium	63.8	11.2	2.1	3.5	...
Dexia	Belgium	15.5	4.0	0.8	1.4	B
KBC	Belgium	26.7	10.7	1.1	2.2	B
ING Belgium 1/	Belgium	11.7	7.3	...	2.6	B

Sources: Aherarne and others, (2005); and individual bank annual reports; staff estimates.

1/ Mortgage loans based on staff estimates.

2/ Moody's Bank Financial Strength Rating.

21. **Further, risks to banks are increasingly shifted to investors due to the increased utilization of various instruments such as mortgage backed securities.** However, this market is still embryonic in Belgium, which relies on savings deposits for funding. Currently, mortgage bonds are the second most important funding instrument for mortgage lenders in Europe after retail deposits; and according to the European Mortgage Federation (EMF), mortgage bonds fund 15 percent of the European Capital Market. In case of mortgage bonds, the issuing institution still carries the credit risk associated with the mortgage; the advantage of mortgage backed securities is that this risk is transferred to the investor. According to the EMF, for 2004, an overall growth of up to 25 percent is expected in the European covered bond market, due to the increased issuance of structured covered bonds and the emergence of covered bond legislation in Portugal and Belgium. However, in this highly dynamic environment, the recent Global Financial Stability Report⁹ warns, that the recent increased risks in mortgage markets may lead to a correction of tight spreads in mortgage-backed securities markets.

⁹ Global Financial Stability Report (September 2005), IMF.

What has been the impact of institutional and policy changes on risk taking behavior and prices?

22. **While it is hard to assess the direct impact of fiscal policy on real estate prices, recently introduced tax and regulatory changes may have fueled housing prices and encouraged increased risk taking.** Some of these changes such as the reduction in transaction costs reduce inefficiency and are welcome. However, some may have encouraged holding high levels of mortgage debt, and therefore led to higher LTV values.

23. **Recent changes in regulation shifted some of the risks from banks and households to the government, at no cost to the households and banks.** Since the late 1990s, anyone making use of subsidies for house purchases has also received government mortgage insurance, which insures the lender against non-payment of the mortgage. In addition, the Flemish government introduced in 1998 an insurance scheme for all others, with non-subsidized mortgages. This insurance works for any household in case of income loss. When concluding a mortgage, a household can get a free insurance from the Flemish government. The provider of that insurance is a large public insurance company that won the contract from the government and the cost of the insurance is paid by the Flemish government. From the moment a mortgage is concluded, the insurance lasts for 10 years. If during that period a household becomes unemployed involuntarily, it can get, after a waiting period of six months, a monthly contribution to the repayment of the mortgage, for a maximum of three years. This contribution does not cover the whole sum and cannot exceed 496 euros per month, in addition the household still needs to pay a minimum of 248 euros.¹⁰ While it is unlikely that this change has led to a drastic shift in risk taking among households, it does reduce the overall risk of the mortgage portfolio for banks.

24. **These changes may have contributed somewhat to the attractiveness of mortgage loans, despite very high mortgage enforcement costs in Belgium.** The usual time required for the distribution of the proceeds to creditors in Belgium is 18 months and the administrative costs amount to approximately 19 percent of the property value (Table 6). In comparison, the time required in the Netherlands is 6 months and the administrative costs are approximately 3 percent. Whereas in the UK, the time required is 8–12 months and the administrative costs are 2.6–7 percent.

25. **There were some welcome reductions in transaction costs, which may have contributed to the attractiveness of real estate in recent years.** Housing related transaction costs are significantly higher in Belgium than in other European countries (Table 6). A household pays approximately 18 percent of the house price in transaction costs: 12.5 percent in registration tax, a 2.5 percent notary fee, and a 3 percent real estate broker fee. However, 18 percent is an upper limit. Not all real estate transactions are brokered by real estate agents and registration tax is lower for modest houses (6 percent). In 2002, the

¹⁰ CML Research (November 2004).

region of Flanders reduced registration taxes to 10 percent (5 percent for modest houses) and introduced the portability of transaction taxes and a tax exemption on the first 12,500 Euro of the acquisition price. In the Brussels region, a tax exemption on the first €45,000 or €60,000 of the acquisition price was introduced in 2003. These changes, may explain some of the increases in house prices for apartments and small houses, particularly in the Flanders region, since young households can enter the market by buying an apartment or a small house to resell it later, rather than wait until they have sufficient finances to buy a house.

Table 6. Time Required and Cost of Mortgage Enforcement Procedures

	Mortgage Enforcement Costs		Purchase Costs
	Usual time required 1/ (months)	Administrative costs 2/ (in percent)	Housing transaction costs 2/ (in percent)
Austria	6
Belgium	18	18.7	18.0
Denmark	6	...	11.0
Finland	3	2.5	...
France	15–25	7.0	15.0
Netherlands	6	3.0	11.0
Sweden	5	5.0	...
United Kingdom	8–12	2.6–7.0	4.0
United States	8	11.5	10.0

Sources: OECD Economic Outlook, No:75; The Economist; Ahearne and others (2005).

1/ Total time from right of execution (in the countries where the mortgage must be given executory power by a court) to the distribution of proceeds to creditors.

2/ Costs usually include both fixed and variable components; calculated for a property value of €100,000; does not include lost interest during the procedure.

26. **The tax amnesty of 2004 may explain a significant part of the run up in prices in 2004.** Prices of apartments did not evolve in the same way in different regions of the country. While the nominal rate of increase stabilized at a high level in Brussels (around 15 percent), it increased to respectively 14 percent and 12 percent in Flanders and Wallonia (from around 8 percent in 2003). The highest jump in prices was recorded in the coastal area, where prices rose by 17 percent compared to only 4 percent in 2003. The high rate of increase in the coastal area points to the fact that a considerable part of the country-wide increase in the price of apartments is due to an increased demand for second residences. This likely may be a one-off development in response to the fiscal amnesty operation in 2004, since households most likely have been reinvesting some of the repatriated capital in real estate.

27. **Further, while several European countries reduced interest deductibility of mortgage loans, recent changes in Belgium increased the attractiveness of debt and may have contributed to the high loan-to-value ratios.** For example, in the UK the tax deductibility of interest on mortgage loans was progressively decreased during the 1990s and finally eliminated in 2000. In Denmark, the rate of tax deductibility was reduced in 1998. In Belgium, mortgage interest payments are tax deductible and the new fiscal regime for mortgage related expenses, which entered into force in 2005, frontloads the fiscal advantage

of a mortgage loan to the first 10 years of the loan. The new legislation introduced a unique amount—€2,480 per year in the first 10 years and €1,860 afterwards—that can be deducted from the borrower's taxable income. These fiscal advantages significantly reduce the effective interest rate that has to be paid on mortgage loans. In case of a loan of €100,000 for instance, with a maturity of 20 years and a yearly variable interest rate of 3.3 percent, the effective rate in the first year of the loan falls to 1.3 percent, if the amount of €2,480 can be deducted by two persons, which both have a marginal tax rate of 40 percent. In case of a loan with a fixed interest rate of 4.7 percent, the effective rate would amount to 2.7 percent in the first year.¹¹

Would a slowdown in the housing market impact economic growth?

28. **With interest rates rising, a slowdown or a reversal in real estate prices is likely.** The unprecedented low-interest-rate environment, the development of new mortgage products, increased price competition among banks to attract mortgage loans, and refinancing activity (Table 7) has been freeing cash flow for households and been allowing them to afford large amounts of mortgage debt. Historically, in industrialized countries, if a boom market was followed by a bust, real housing prices contracted for 25 to 30 percent from peak to trough, lasting on average 3-5 years.¹² Even in the absence of a bust, if a boom market was followed by a bear market, it led to a contraction in real housing prices of 6 percent on average, lasting for about 1 year. A slowdown or a reversal in prices of these magnitudes can affect the economy through a number of channels: (i) wealth-savings-consumption, (ii) residential construction, and (iii) purchases of consumer durables associated with housing.

29. **The economic slowdown that follows a housing price bust can be considerable.** Historically, even though housing price busts have been associated with more modest price decline than equity price busts, the effect of a housing price bust on output has been twice as large than an equity price bust. Evidence from event studies on industrial countries suggests that, on average, the output level three years after the beginning of a bust was about 8 percent below the level that would have prevailed in its absence.¹³ Moreover, the slowdown after a housing price bust lasted on average about twice as long as a stock market bust.

30. **Historically, housing prices in all countries have been cyclical, mainly driven by interest rate fluctuations.**¹⁴ Further, housing price booms have on average lasted for only about 4 years. The fact that, since the last downturn in prices in Belgium in the mid-80s, price increases have been consistently strong, implies that price pressures may be building

¹¹ Calculations by Belgium authorities.

¹² See also World Economic Outlook, September 2005, Chapter I; World Economic Outlook, April 2003, Chapter II; and BIS paper number 21 (2005), for details.

¹³ Helbling (2005).

¹⁴ In fact, housing prices in general are found to be pro-cyclical, Ahearne, and others (2005).

up. In the sample of Helbling and Terrones, the implied probability of a housing price boom being followed by a bust is about 40 percent. The current price increases in Belgium have surpassed previous cycles in housing prices. A large part of that increase, but not all of it can be attributed to changes in fundamentals, suggesting that price increases may slow down as appears to be happening in 2005.

31. **In the late 1970's Belgium experienced a significant run up in real estate prices followed by a severe price correction, starting in 1979.** The housing market reached its trough in 1985, falling by over 50 percent in real terms. During this time Belgium experienced a significant slowdown in growth, and a severe contraction in fixed investment (Figure 3). Residential real estate investment fell from €9.7 billions in 1980 to €4.6 billions in 1983 and did not recover to its pre-crisis levels until 1990. During the crisis, the contribution of residential real estate construction to GDP growth remained negative for 3 consecutive years and reached -2.4 percent at its worst (1981).

32. **While the situation today is not as in the 1970's, a slow down in the housing market in response to higher interest rates would nonetheless adversely impact macroeconomic growth.** The shock in the late 1970s did not originate in the housing market; but rather was reflected in it. Further, residential construction in Belgium now accounts for approximately 4 percent of GDP, whereas in 1980 it was 6 percent of GDP.

Table 7. Belgium: Breakdown of New Mortgage Loans
(millions of euros)

	Purchase and Transformation	Construction	Other	Refinancing	Total	Refinancing as % of New Mortgage Loans	Refinancing as % of Nominal GDP
1996	4,703	2,055	387	1,577	8,722	18	0.6
1997	5,508	1,993	511	3,662	11,674	31	1.5
1998	5,968	1,811	484	3,114	11,377	27	1.2
1999	7,520	2,546	661	5,662	16,389	35	2.3
2000	6,131	1,619	403	540	8,693	6	0.2
2001	6,283	1,600	350	519	8,753	6	0.2
2002	7,476	1,911	385	651	10,423	6	0.3
2003	9,820	2,623	517	3,359	16,319	21	1.1
2004	10,269	2,590	597	2,494	15,950	16	0.7
2005 Q3	10,808	2,737	790	3,004	17,339	17	1.0

Source: Union Professionnelle du Cr dit - UPC.

E. Conclusions

33. **Fundamentals, in particular low interest rates, a shift of bank lending toward the mortgage market, and changes in fiscal incentives have contributed to buoyant residential property price developments in Belgium.** On standard analysis, price increases are considerable, raising the probability of a slowdown or even a temporary reversal, at least in real terms. A slowing or a reversal in real estate price increases as a consequence of

interest rate increases has the potential to weaken demand through a variety of channels but its impact is difficult to quantify.

34. **However, price developments in Belgium have been more modest compared to other countries and lasted for a longer time period and overall risks seem to be confined.** The pricing cycle in Belgium has showed similarities with the Netherlands, where prices also have been growing for almost two decades. However, while prices in Netherlands accelerated rapidly in the mid 90's Belgian real estate prices continued on the same trajectory during that time period. More recently, real estate prices in the Netherlands slowed down, while prices in Belgium have accelerated, at least through 2004. However, vulnerability is limited as mortgage debt of Belgian households is comparatively low.

35. **Nonetheless, it will be important for policy makers and supervisors to be vigilant of price developments in real estate markets.** In absence of monetary instruments, fiscal policy and supervision may become important tools to help reduce pressures. Timing of fiscal policies may have had an impact on recent price developments and it would be prudent to factor in price impacts of policy changes while markets are buoyant. Further, supervisors should consider following lending practices of banks closely to preempt a possible build up of vulnerabilities.

36. **The development of new mortgage products in Belgium and the increased accessibility of loans are welcome from an efficiency perspective, but associated risks need to be well managed.** Banks overall seem on a strong financial footing, however, a change in interest rates is likely to impact economic growth. Particularly, households with variable rate loans and the marginal households that were just able to afford a house using the front loaded fiscal benefits, may experience a cash flow squeeze when interest rates go up.

37. **Some of the recently introduced policies encouraged households and banks to take risks.** Interest deductibility and frontloading the fiscal advantage of a mortgage debt have encouraged households to leverage themselves. Further, government financed insurance schemes for mortgage debt have shifted some of the risk from banks to the government, and thus the taxpayer. This is likely to have adversely affected the incentives for banks to scrutinize risk contracts. Despite these various new policies, housing affordability has deteriorated.

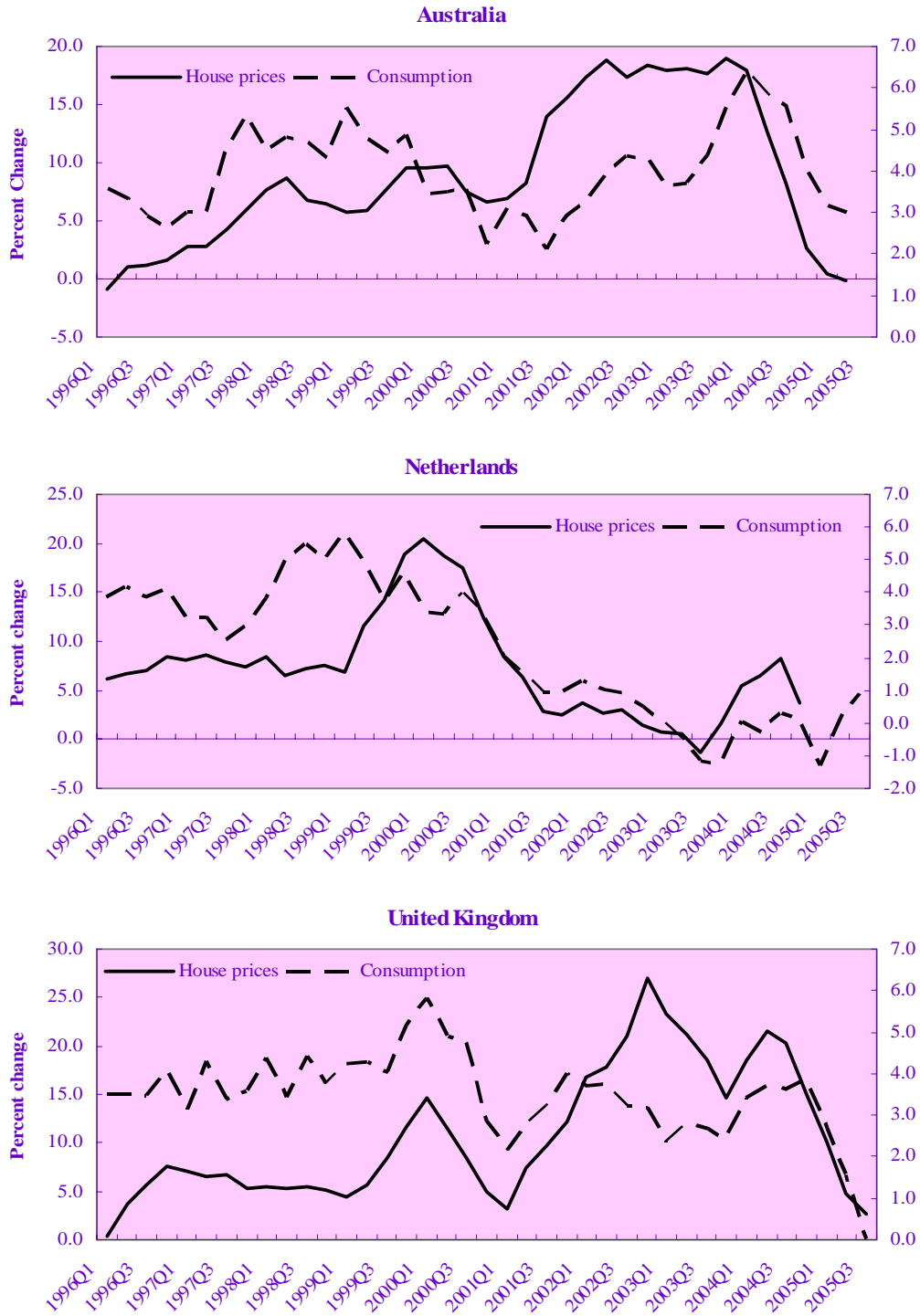
38. **Drawing on experience from other countries, the vulnerability of the economy and financial system to developments in real estate markets can be reduced along a number of dimensions:**

- **Education:** It is essential that households are adequately informed and educated about the risks of real estate investment and the potential future costs of mortgage loans. With the previous real estate bust a memory of the distant past it is likely that households are not aware of the possibility of a downturn in housing prices. Further, it is possible that households are excessively concentrated on their current budget and

the affordability of a loan in the first year, rather than a long term view on the mortgage product that they purchase.

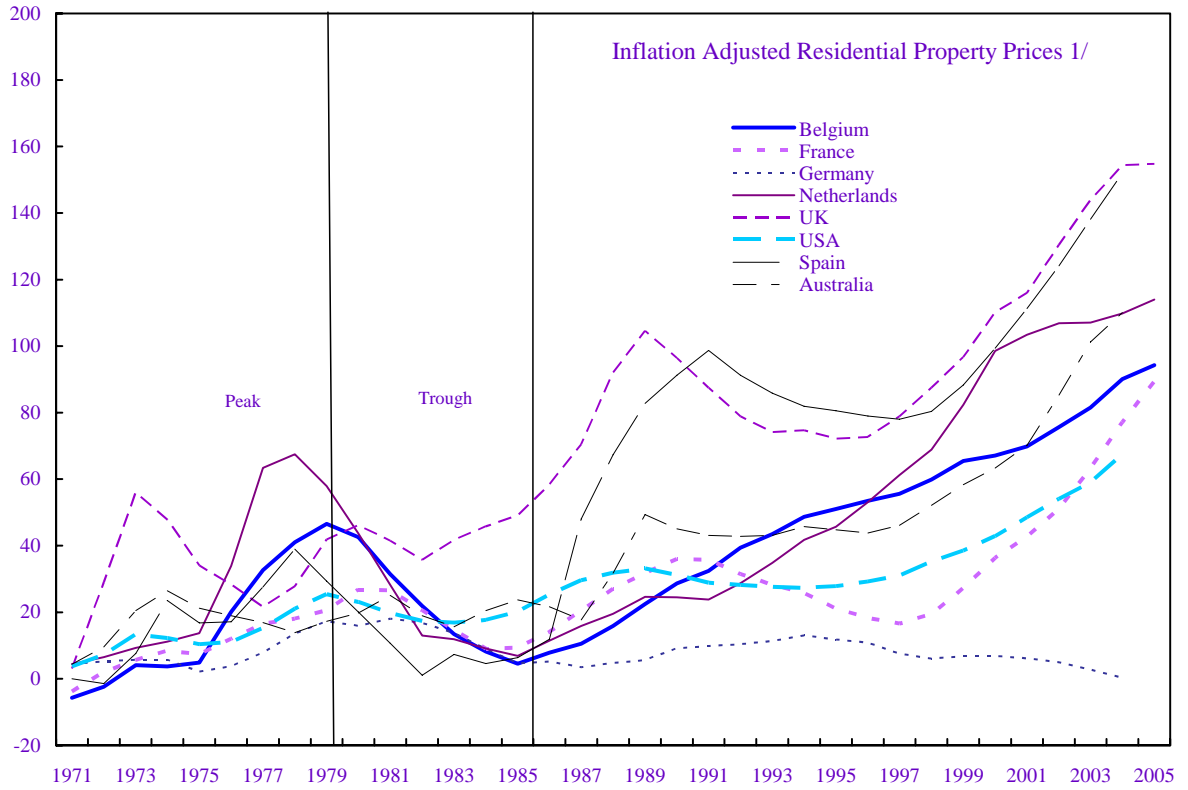
- **Supervision:** Mortgage lenders should not only concentrate on what a household needs to pay as an effective mortgage payment in the beginning of a loan, but also calculate the estimated future burden of a loan—once interest rates go up and once the frontloaded fiscal advantages wear off. Banks could be asked to monitor LTV ratios of new mortgages more closely and eventually a ceiling on these ratios could be introduced.
- **Market efficiency:** Risks to banks should be reduced by developing complete mortgage markets rather than shifting risks from banks to the government. Even though a politically sensitive topic, the improvement of mortgage enforcement could further reduce the costs and risk associated with mortgage lending.
- **Policy distortions and contingency plans:** Going forward, the policy discussion should concentrate on reducing transaction costs, rather than distorting prices by giving incentives to households to acquire debt and leverage themselves excessively. In absence of an independent monetary policy, Belgium could prepare a contingency plan, using various tax policy changes to avoid price booms and busts. The experience of countries such as Denmark, which reduced interest deductibility of mortgage loans, suggests that housing markets respond sensitively to policy changes. Timing of policy changes also matters. From this perspective, some of the recently introduced policy may have been ill-timed, fueling housing prices when they were already increasing rapidly.
- **Information:** to enhance market functioning and supervise mortgage related risks more effectively, the collection of housing related statistics could be improved. In particular detailed data on the stock of mortgages, such as the percentage of flexible loans in the stock should be collected. Data on investor behavior, in particular turnover of housing and buy-to-let statistics should be collected systematically. Further, more detail on housing related statistics such as rental prices, LTV ratios (by income segment), and bank exposure could be made available more frequently and in timely manner.

Figure 1. Private Consumption and Real Estate Prices



Source: National authorities, WEO.

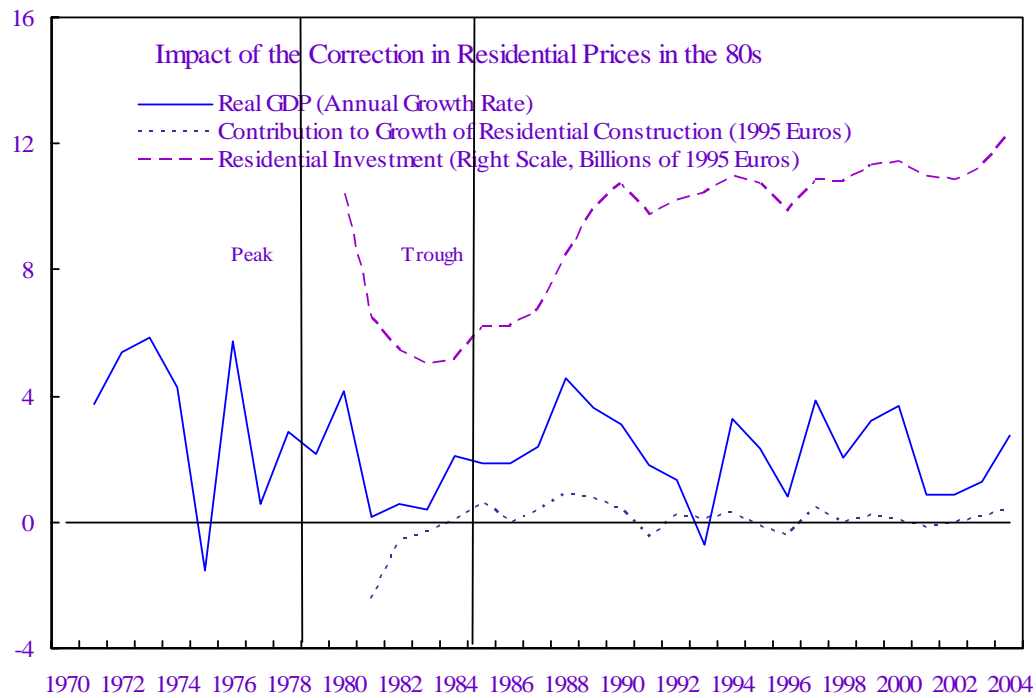
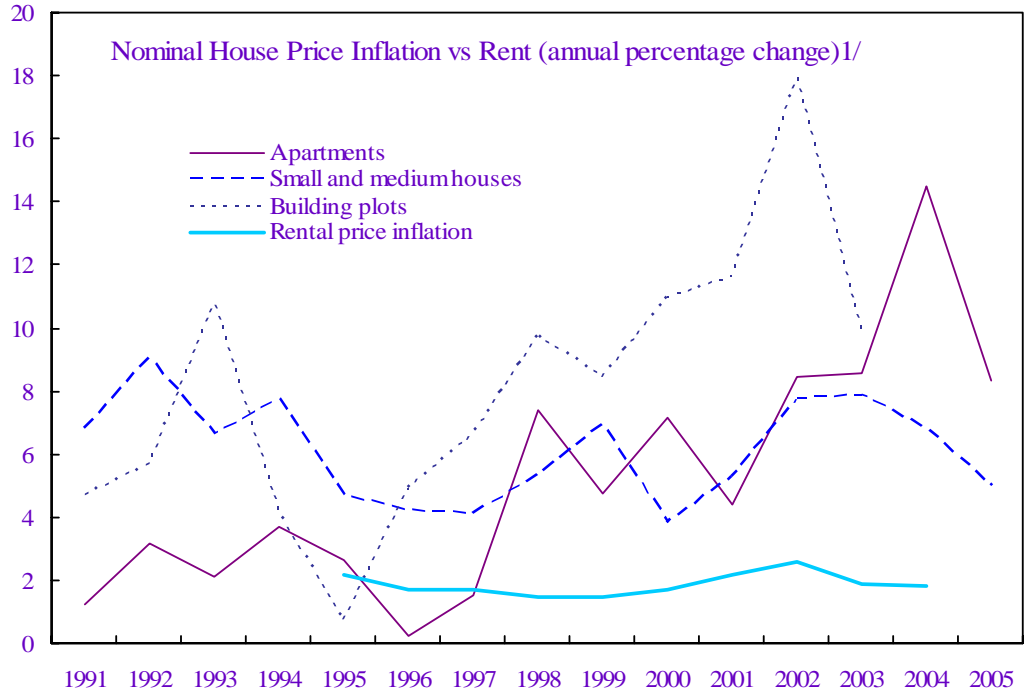
Figure 2. Real Estate Price Developments



Sources: Provided by national authorities and BIS.

1/ BIS calculations based on national data, cumulative real growth rates (1970=0).

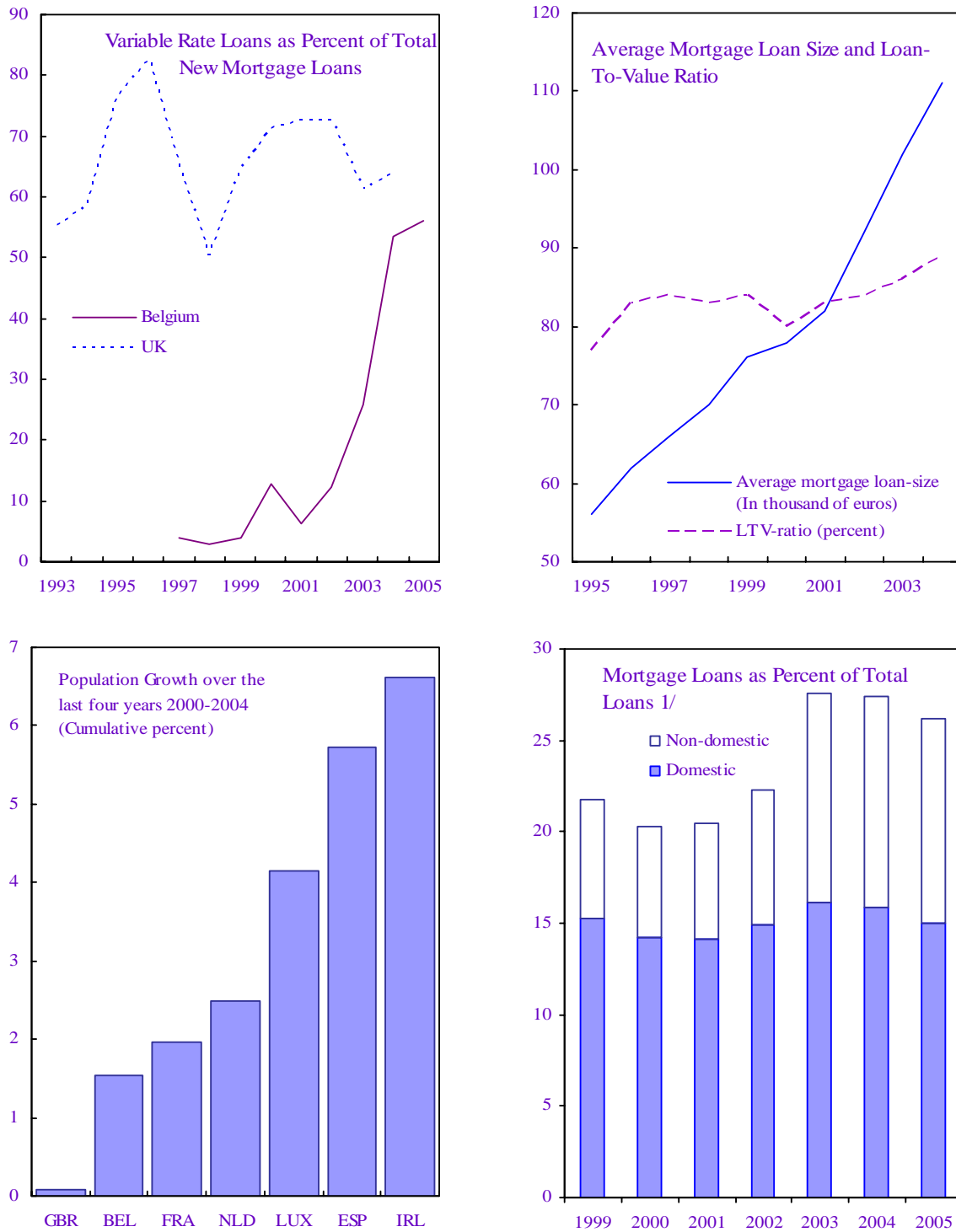
Figure 3. Belgium: Real Estate Prices and Construction Activity



Sources: Provided by Belgian authorities and IMF.

1/ Preliminary 2005 data, collected from a news report, not directly comparable to previous years.

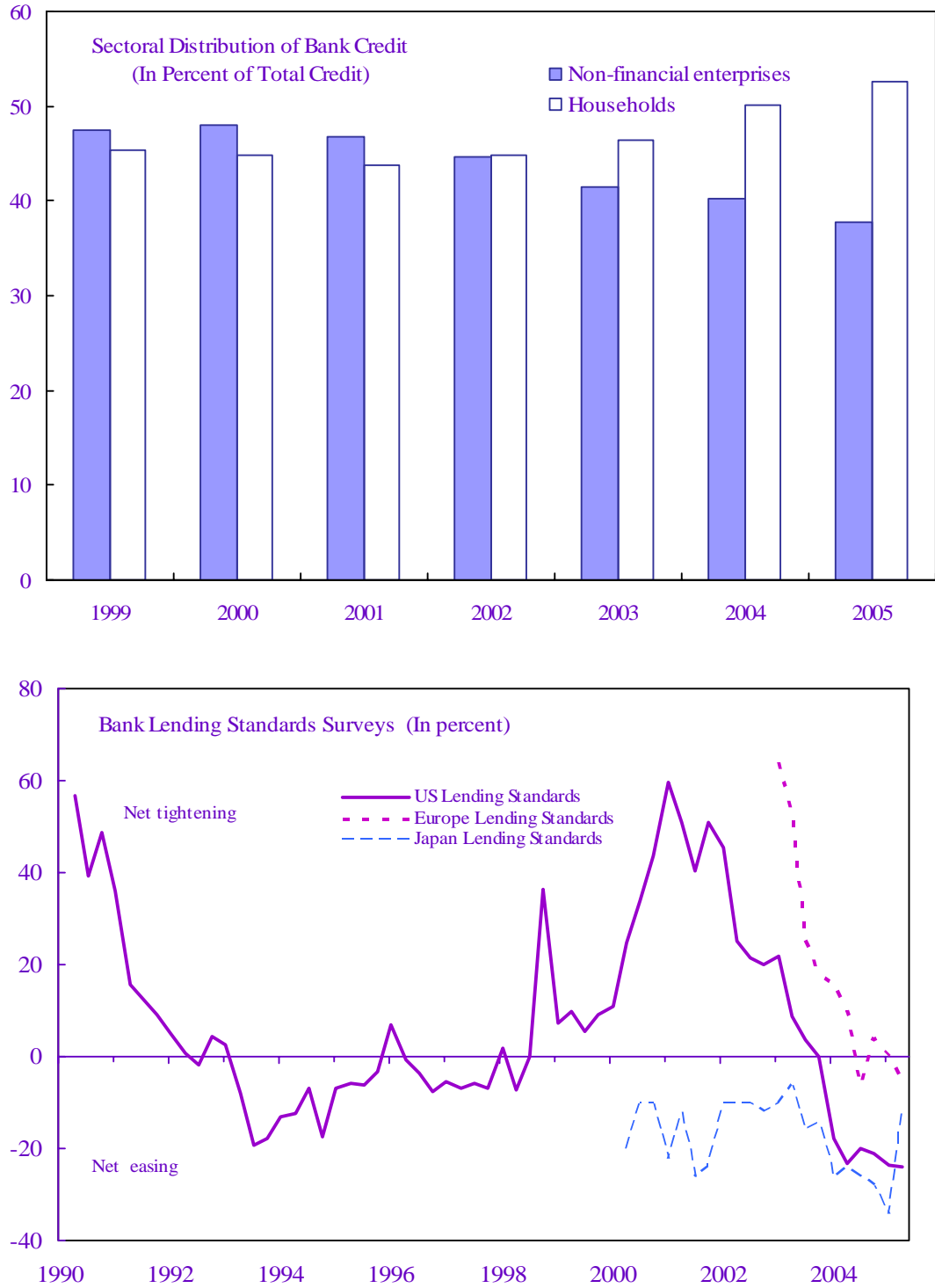
Figure 4. Belgium: Key Mortgage Statistics



Sources: Provided by national authorities and BIS.

1/ Mortgage loans after deduction of deposits related to mortgage loans; consolidated basis.

Figure 5. Belgium: Bank Lending



Source: IMF, Bank Lending Survey.

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II. MACROECONOMIC IMPACT OF LABOR AND PRODUCT MARKET REFORMS¹⁵

A. Introduction

39. **Greater competition in goods, services and labor markets increases economic efficiency, output and employment, though structural reforms to achieve this outcome may engender transition costs.** In recent years, Belgium has made good use of economic deregulation and the reduction in the administrative burden on enterprises and tax payers to cut the cost of doing business. However, raising flexibility in the labor market is proving to be more difficult. Wage bargaining continues to determine outcomes, with strong labor unions favoring wage increases over job creation. Against this background, simulations with a large scale economic model—the IMF’s global economic model (GEM)—find that labor market reform in Belgium would appreciably raise output, employment, and consumption. Its impact on production would be of the same order of magnitude as further reforms in goods (tradables) and services (nontradables) markets combined. Transition costs in the form of lower real wages (as labor utilization increases) can be alleviated by implementing labor and product market reforms concurrently.

40. **GEM is well equipped to analyze the macroeconomic effects and cross-country implications of structural reforms.** It is a large-scale version of the class of new open economy macro models, incorporating international economic linkages (Bayoumi and others, 2004). Its structural equations are rooted in microeconomic theory, an advantage over traditional macro models. While the latter can provide valuable insights into explaining past economic behavior and have proven useful for short-term forecasting, they tend to be inadequate when economic structures change. Exactly this happens when markets become deregulated and competition increases. GEM assumes monopolistic competition, which allows the explicit analysis of removing distortions. At the level of abstraction of GEM, this is done by varying the mark ups in labor, tradables and nontradables markets. Adjustment costs for nominal and real variables enable GEM to mimic the typical hump-shape reaction of macroeconomic variables to shocks observed in reality. GEM nonetheless remains a simplification of reality, requiring caution in interpreting the magnitude of the results. For example, there are no interactions between product and labor market reforms. Similarly, there could be other reforms, e.g., improving research and development, which may have sizeable output effects beyond the ones considered here (Biatour and others, 2005).

41. **The remainder of this chapter is structured as follows:** Section B describes the model setup and calibration of some crucial economic relations and parameters. Section C discusses the level of competition in labor, tradables, and nontradables markets in Belgium and other EU countries, with special emphasis on the size of markups. Section D looks into the economic impact of increasing competition in each market separately and the advantages of synchronizing reforms across markets and within the euro area. Drawing from the

¹⁵ Prepared by Luc Everaert and Werner Schule.

literature, Section E discusses how to translate the generic decline in markups simulated with GEM into actual reforms in the Belgian institutional context. Section F concludes.

B. Model Setup and Calibration

42. **In the version of GEM used here, the world consists of four blocks that have been calibrated to represent Belgium, the rest of the euro area, old non-euro area members of the European Union (RE), and the new EU member states (NMS).** This setting captures the EU context of structural reform in Belgium and the current monetary policy arrangements. Most prominently at the Lisbon Council, EU countries have committed to an ambitious reform agenda to make the EU into a dynamic, competitive, and well-integrated economy. This is driven by concerns to boost potential growth to alleviate the adverse consequences of aging populations on budgets and growth. For countries which are part of the euro area, it is also motivated by the need to increase the flexibility of their economies to deal with the constraints of monetary union. The definition of the four blocks provides a natural design for the simulation exercise. The non-euro area old members of the EU, i.e., Denmark, Sweden, and the United Kingdom (RE), are on average further advanced in labor and product market reforms. Hence, simulations quantifying the effect of Belgium (and the rest of the euro area) reducing markups to the average level of this block are a useful reference point. Importantly, this does not imply that each of the three RE countries has an optimal level of markups nor that their average is an ideal benchmark. Similarly, zero markups should not be seen as ideal. Some markup can be justified as an incentive for innovation and as the result of efficiency-wage type contracts.

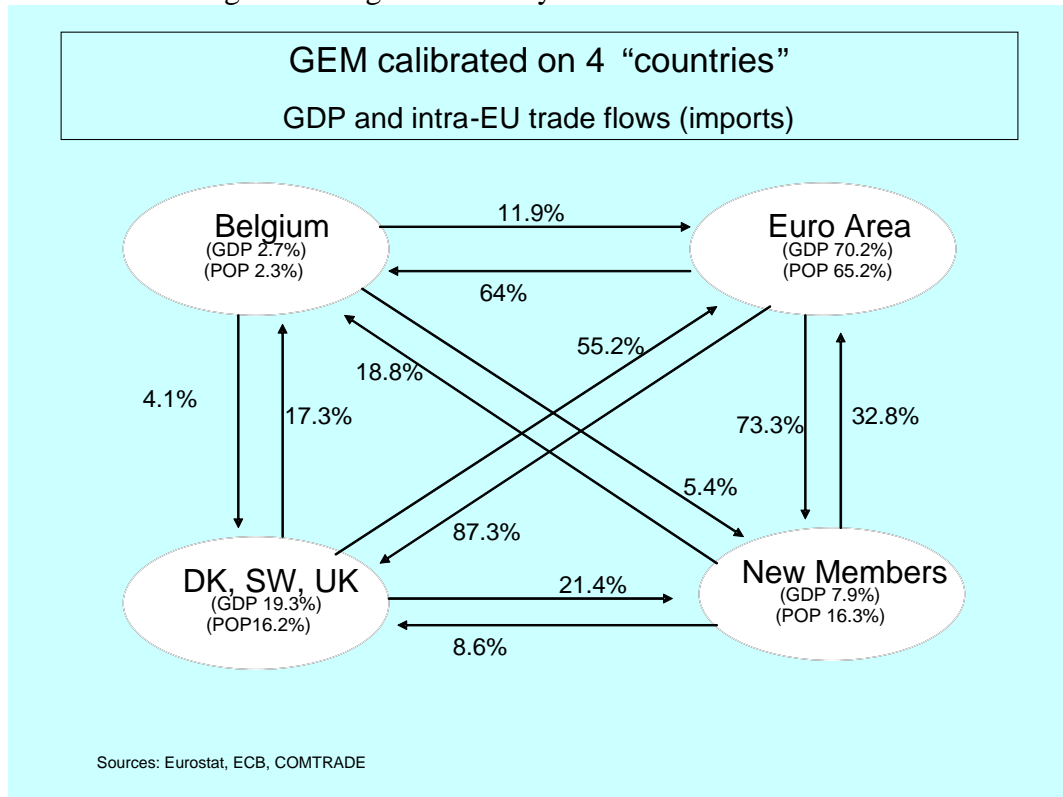
43. **Belgium is by far the smallest of the four blocks but relatively more open to non-euro area countries than the other blocks.** The shares of population and real GDP (in purchasing power) of the four blocks add up to the “world” of the model and thus sum to 100 percent (Figure 1). Trade covers intra-EU flows only, leading the four blocks to appear less open than they are in reality, with spillover effects limited to those that benefit EU members.¹⁶ Overall trade shares cover goods and services, while the bilateral and sector decomposition is based on trade in goods only.¹⁷ It is assumed that bilateral services trade flows are proportional to trade in goods. This may introduce a small bias as Belgium is a highly service-oriented economy and the geographical distribution of services trade may not fully match that of trade in goods. In addition, due to its geographical location, transit trade is

¹⁶ Bayoumi and others (2004) estimate spillovers from the euro area to the rest of the world, which provide a benchmark for the degree of underestimation of spillover effects due to the reduced-openness assumption.

¹⁷ Trade flows are based on the UN COMTRADE statistics. For the sake of simplicity, the commodities sector was excluded from this version of GEM.

much more important for Belgium than for the other blocks. In order not to overestimate the economy's openness, this trade (estimated at 55 percent of total) was excluded.¹⁸

Figure 1. Belgium: Country Size and Trade Relations



44. **The size of Belgium's public sector is somewhat smaller than the EU average.** Excluding transfers and interest payments it absorbs about 19.6 percent of GDP, compared to 22.8 percent in the rest of the EU.¹⁹ Though the wage bill is slightly higher in Belgium (12.2 percent) than in the other three blocks (about 11.6 in the rest of the euro area and NMS and 10.5 in RE), total public consumption is marginally lower than the average. Public investment (1.6 percent of GDP) is lower than in the rest of the EU.

45. **Nominal and real rigidities need to be calibrated to produce realistic dynamic adjustment patterns.** The EU economies are characterized by relatively strong real rigidities, relatively high adjustment cost in the investment equations, and strong habit persistence in consumption, combined with a high inter-temporal elasticity of substitution. There is also habit persistence in labor supply. These real rigidities are necessary to enable

¹⁸ This estimate is approximate. It was guided by the observation that according to input-output tables about 45 percent of final domestic demand consists of imports (Avonds, 2005, Table 47).

¹⁹ These items are excluded since they do not represent a true claim on resources by the public sector.

GEM to mimic the typical hump shape response of GDP to some standard shocks found in VAR studies. Behavioral parameters were taken from the relevant literature, some of which are invariant across countries, and others have been modified when country-specific information has suggested it (Table 1).²⁰ Once the degree of real rigidities has been set, adjustment costs in price and wage equations are calibrated to reproduce realistic sacrifice ratios (2.1 in Belgium and the rest of the euro area, 1.4 in the RE block, and 1.6 in the NMS block).²¹

Table 1. Selected Calibration Parameters

	Belgium	Euro Area	RE	NMS
Elasticities of substitution				
Intertemporal consumption	0.996	0.996	0.996	0.996
Elasticity of labor supply (Frisch)	0.33	0.33	0.33	0.33
Tradable and nontradable	0.50	0.50	0.50	0.50
Domestically-produced and imported tradables	3.20	1.20	1.20	1.20
Habit persistence				
Consumption	0.91	0.91	0.91	0.91
Labor	0.80	0.80	0.80	0.80
Discount factor	99.4	99.4	99.4	99.4
Home bias				
Consumption	0.59	0.77	0.11	0.84
Investment	0.56	0.75	0.02	0.82
Liquidity-constrained consumers (share)	0.35	0.40	0.25	0.55
Tax rate on labor (baseline steady state)	0.457	0.366	0.325	0.410

Source: IMF staff assumptions.

46. **The macroeconomic benefits of reform are particularly sensitive to the wage elasticity of labor supply and the degree of import substitution.** The elasticity of labor supply with respect to real wages is set at 0.33, the high end of estimates in micro studies, but the results of an alternative, lower value (0.16), are also reported. The response of output and employment to a reduction in wage markups depends positively on this elasticity. Spillover effects of reforms in one country to the rest of the EU are inversely related to the degree of import substitution, because of the resulting stronger real exchange rate movements.²² The

²⁰ See Bayoumi and others (2004) for the calibration details. This paper follows in their footsteps.

²¹ Estimates of sacrifice ratios, the cumulated output costs of reducing inflation permanently by 1 percentage point, are often higher than these values, but they might reflect slow learning by central banks during the transition from a high to a low inflation environment.

²² For an extensive discussion of the sensitivity of results with respect to these parameters see Bayoumi and others (2004).

elasticity of substitution between imports and domestic production was set at 3.2, implying that Belgium has limited pricing power in global markets.

47. **GEM permits meaningful fiscal policy scenarios through the introduction of household liquidity constraints, distortionary taxes, and a fiscal rule.** The share of liquidity-constraint households is assumed to be 35 percent in Belgium, below the euro area average but above the equivalent share of Denmark, Sweden, and the United Kingdom.²³ An alternative, where the share is the same in Belgium and the RE block, is also considered. A fiscal policy rule ensures that the public debt-to-GDP ratio is stable in the long run by adjusting tax rates on labor automatically so that public debt approaches a target level.²⁴ In the baseline, in accordance with the authorities' stated preference of using declining interest payments to fund the rising cost of aging, the debt-to-GDP ratio gradually decreases from its current level of about 95 percent of GDP to a steady state level of about 4 percent of GDP.²⁵

48. **Monetary policy is set by the ECB, which targets euro area-wide indicators.** Nominal interest rates in Belgium are determined by the ECB, which is assumed to follow a forward-looking rule, targeting inflation in the entire euro area. Following Orphanides (2003),²⁶ the interest rate rule nests a variety of policy strategies. Belgian inflation and its output gap enter the ECB rule with the weight of its GDP in the euro area. With the euro as its currency, fluctuations in Belgium's nominal effective exchange rate are limited. Consequently, changes in relative prices between tradables and nontradables, or the real effective exchange rate, take the form of inflation differentials and result in important cross-country variations in the real interest rate after shocks.

C. Markups in Product and Labor Markets

Product markets

49. **Markups measure firms' pricing power in goods and services markets and are inversely related to the substitution elasticity of demand.** In GEM, markups derive from the assumption that each product is made by one monopolistic firm. However, there is a very large number of firms offering a continuum of diverse products and services that are imperfect substitutes. Each firm sets a price for its product, given a demand curve, so as to

²³ Households have good access to credit both through consumer and mortgage credit and have built up large net asset positions from which they can draw to bridge temporary liquidity constraints.

²⁴ Tax rates on capital income are fixed at 10 percent. More sophisticated scenarios can be run by changing expenditures and taxes discretionary, alleviating the burden that falls on labor taxation.

²⁵ At this level, the cost of aging is covered by savings of the interest bill, and the public debt-to-GDP ratio is stable. In the model, a higher steady state level of debt would require somewhat higher taxes and result in lower economic efficiency.

²⁶ See also WEO April 2005, Annex 3.3 to Chapter III.

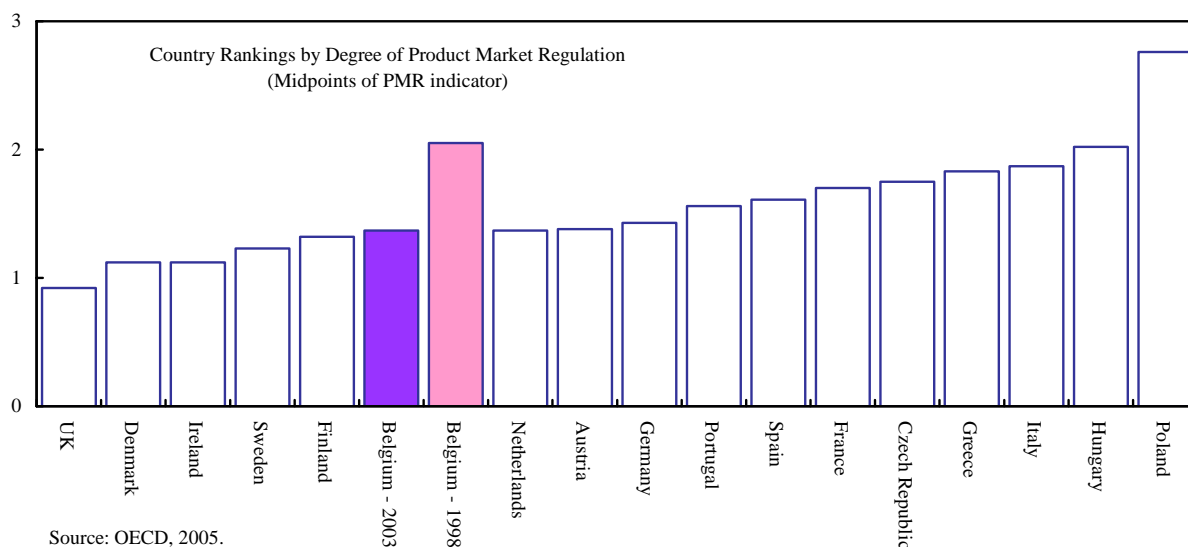
maximize profits.²⁷ The elasticity of substitution of demand between products of different firms (the slope of the demand curve) determines the market power of each firm, which sets prices subject to the risk of losing market shares. The simplicity of this relation makes the analysis tractable, but admittedly comes at the expense of being agnostic about specific reasons for imperfect competition. Nonetheless, the model is nonlinear so that the effect of reforms per “unit” of reform is larger the further the markup is away from the target of the simulation.

50. Over the past five years, Belgium has considerably deregulated its product markets, modestly improving its relative ranking. The state sharply decreased its involvement in business operations by reducing the scope of the public enterprise sector and direct control over business enterprises and eliminating price notification requirements. Barriers to foreign ownership were virtually abolished and tariffs slashed. Nonetheless, public ownership remains relatively high as does the use of command and control regulation. On balance, the OECD (Conway and others, 2005) measures the degree of product market restrictedness (PMR) in Belgium currently as somewhat below the EU average (Figure 2).²⁸ While most euro area member states are in a middle position, the United Kingdom is the most liberalized, and Denmark and Sweden are also in the top four (together with Ireland). The larger EU NMS are considered among the least competitive. The relative position of countries on the PMR scale was used to guide the calibration of markups in the NMS, where direct measures were not available.

²⁷ This simple formula ignores adjustment costs. An elasticity of substitution of 5 translates into a markup of 1.25 (25 percent). The markup goes to zero only if all products are perfect substitutes.

²⁸ More precisely the OECD measure covers trade and investment restriction, regulatory barriers, discriminatory procedures or ownership barriers; licensing and permits, administrative, sector-specific, and legal burdens, anti-trust exemptions; and state influence measured by the size and scope of the public enterprise sector, direct controls over business, and price controls or restrictions on establishment. See Conway and others (2005).

Figure 2. Product Market Regulation Index, 2003



51. **Empirical estimates show significant average markups in goods and services markets in Belgium.** For the simulations here, the assumptions about goods (tradables) and services (nontradables) markups follow largely empirical estimates by Oliveira Martins, Scarpetta, and Pilat (1996) and a number of follow-up publications (Table 2). Markups were adjusted for the size of public sectors as suggested in Bayoumi and others (2004). For tradables, markups in Belgium are consistent with the lower end of estimates by Dobbelaere (2005). Assumptions for the NMS are based on their PMR ranking. The values for the euro area are similar to those in earlier studies.²⁹ Note that services also include financial services implying that financial markets are also assumed to display imperfect competition.

²⁹ Bayoumi, Laxton, and Pesenti (2004); and Hunt (2004).

Table 2. Assumed Markups in Labor and Product Markets
(1 = no markup)

	Labor	Tradables	Nontradables
Belgium	1.36	1.20	1.42
Euro Area, excluding Belgium	1.30	1.21	1.40
Denmark, Sweden, and the United Kingdom	1.17	1.15	1.27
New Member States	1.23	1.29	1.45

Source: IMF staff assumptions.

Labor markets

52. **Economic rents in goods and service markets are shared between producers and workers.** Blanchard and Giavazzi (2003) show that the share of rents going to workers depends on their bargaining power with firms.³⁰ There is abundant empirical evidence of a positive relation between goods market rents and wage premia over market clearing wages.³¹ Workers' rents can assume various forms: wage premia, higher nonwage benefits, and more favorable general work conditions. All of them raise the cost of labor per unit of output. Workers' bargaining power depends on labor market institutions, such as legal job protection, union strength, the generosity of unemployment assistance, minimum wages, the size of the public sector, and political support.

53. **In GEM, workers' bargaining power is reflected in the markup of real consumption wages over the marginal rate of substitution between consumption and leisure.** Each worker offers a specific kind of labor services that is an imperfect substitute for services offered by other workers. The lower the degree of substitutability, because of skill differences, anti-competitive regulation or other factors, the higher will be the markup, and the lower employment in terms of hours. The assumptions about markups in labor markets are based on Jean and Nicoletti (2002) for the euro area and the RE countries, with some adjustment for the degree of public ownership. With Belgium having one of the lowest employment rates in the euro area and labor unions displaying high bargaining power, the markup in Belgium's labor market was set at a level significantly above that of the rest of the euro area. Lacking empirical estimates on the NMS, it was assumed that wage markups lie in the middle between the euro area and the RE block.

³⁰ Gali, Gertler, and Lopez-Salido (2002) developed a related model that explains the bulk of output gap fluctuations with price and wage markups (NBER 8850).

³¹ Including recent work by: Jean and Nicoletti (2002), Saint-Paul (2004); Crepon, Desplatz, and Mairesse (2002); Dobbelaere (2005); and Konings, Van Cayseele, and Warzynski (2001).

D. Impact of Reform

54. **Several simulations were designed to quantify the impact of reforms in labor and product markets.** In each simulation, the shock from the baseline consists of a gradual reduction in markups in labor and product markets to their level in the RE block (Denmark, Sweden, and the United Kingdom). Markups in labor and goods markets are reduced over a period of five years, while in the services sector, deregulation is assumed to progress slower, taking ten years. Reform in each of the markets, labor, goods or tradables, and services or nontradables is simulated separately. Since GEM does not contain interactions between markups in various markets, the reforms can be added up to get their combined impact. Reforms are also considered whether they are implemented in stand-alone fashion by Belgium or coordinated with the rest of the euro area.

Long-run effects of stand-alone reforms

55. **The estimated overall gains from more competition are substantial in terms of GDP, employment, and consumption** (Table 3). Once adjustment in all markets is complete, real GDP will be about 12 percent above baseline, produced by a larger capital stock (18 percent) and more hours worked (12 percent). The increase in consumption, 10 percent, is smaller than the gain in GDP, because resources need to be diverted to investment, and other EU countries benefit from a transfer of purchasing power, though only marginally in the case of Belgium as the country's pricing power is limited. While comparisons across countries are not straightforward, mainly because baseline markups differ, simulations for France show that consumption rises by only 75 percent of the gain in output (compared to 84 percent in the current simulation) as more of the gain is transferred abroad (Schule, 2005).

Table 3. Long-Run Effects of Reducing Markups in Labor and Product Markets in Belgium 1/

(Deviations from baseline in percent)

	Real GDP	Consumption	Hours Worked	Capital Stock
Labor market	5.8	5.9	6.8	5.6
Tradables markup 1.1	5.8	5.9	6.9	5.7
Labor supply (Frisch) elasticity 0.165	3.3	3.4	3.8	3.1
Liquidity const 0.25	7.0	7.1	8.3	6.8
Services	3.0	2.0	2.9	4.2
Tradables markup 1.1	3.1	2.1	2.9	4.1
Labor supply (Frisch) elasticity 0.165	1.9	0.9	1.6	3.0
Liquidity const 0.25	3.0	2.0	2.9	4.2
Goods	3.1	2.5	2.5	7.3
Tradables markup 1.1	0	0	0	0
Labor supply (Frisch) elasticity 0.165	2.1	1.5	1.4	6.2
Liquidity const 0.25	3.1	2.5	2.5	7.3
All markets simultaneously	12.0	10.1	12.2	17.8
Tradables markup 1.1	8.8	7.6	9.6	9.8
Labor supply (Frisch) elasticity 0.165	7.1	5.3	6.5	12.7
Liquidity const 0.25	13.3	11.2	13.7	19.0

1/ Markups were reduced by 19 percentage points in labor markets, 15 percentage points in nontradables, and 5 percentage points in tradables.

56. **In the long run, increasing competition in the labor market yields the largest gains in GDP and employment, but reforms in goods and services also have significant effects.** The impact of reform depends on the size of the reform (the distance from best practice in the EU) as well as the elasticity of output and employment to changes in relative prices. Further, the relationship between the elasticity of substitution across different products and labor inputs and respective markups is nonlinear. Structural reforms produce larger reductions in markups, relative to the reform effort, the further away the starting point is from perfect competition. With Belgium's distance from best practice largest in the labor market, reforms in this market are estimated to yield almost 6 percent in terms of GDP, while reforms in the other markets each yield about 3 percent.

57. **Complementarities between labor market reform on the one hand and goods and services market reforms on the other hand are important.** When implemented in isolation, labor market reform raises output, consumption, and the capital stock by broadly the same amount, but hours work go up more than proportionally. Moreover, real wages remain permanently below baseline because goods and services prices do not decline in proportion with wages, as firms increase rents and limit the expansion of output (Figure 3). Goods and services market reforms raise the capital stock sharply, triggering higher real wages as labor becomes relatively scarce. Consequently, output raises more than proportionally than hours work.

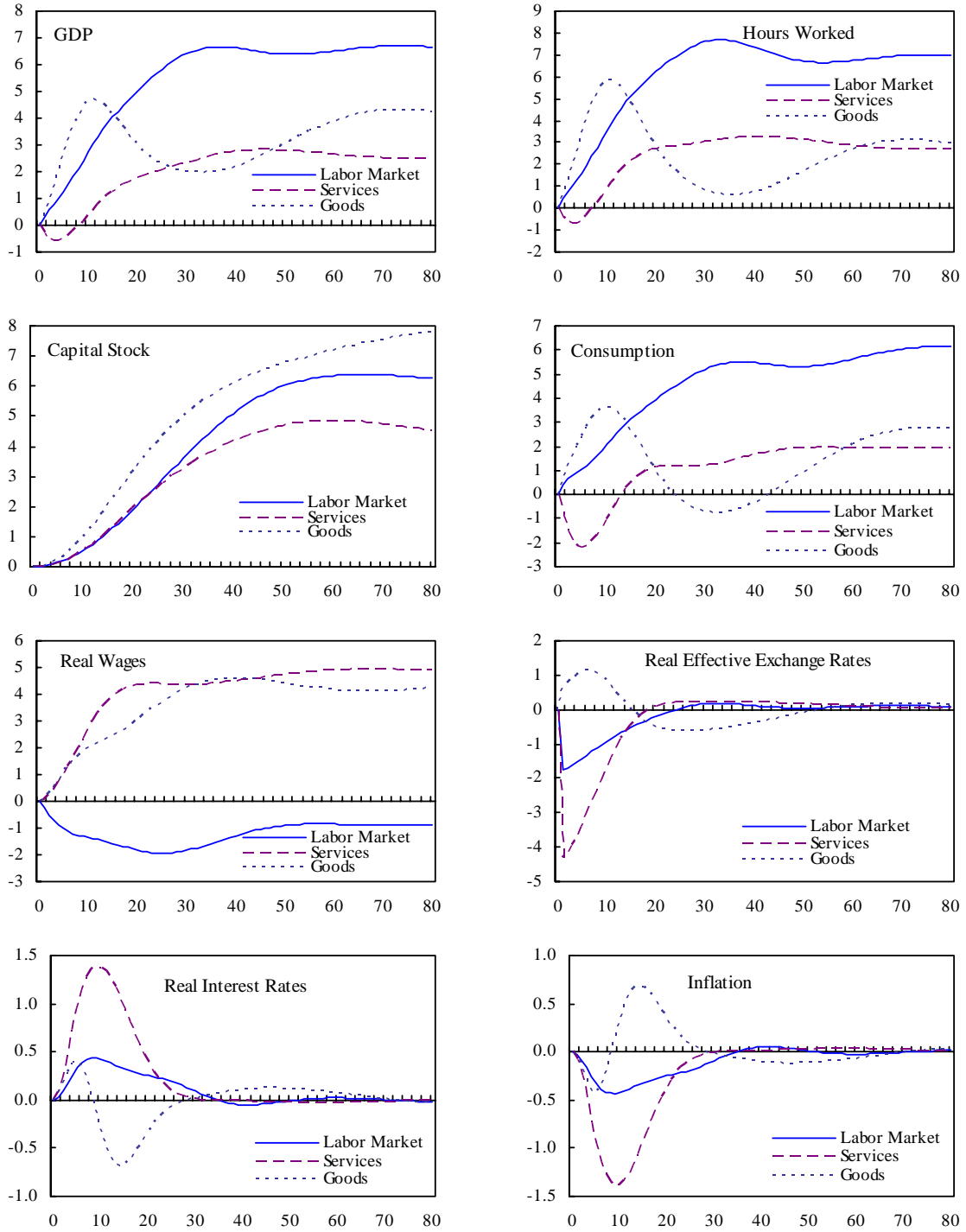
58. **The simulation results are sensitive to changes in a number of key parameters, though without altering the conclusions.** It has been argued that Belgium has little pricing power in international markets and that its markup in the tradable goods sector may actually be even less than in the RE block. By definition, if this was the case, reforms in tradables no longer have an output effect, thus reducing the overall benefit of reforms to 9 percent in terms of GDP. Alternatively, cutting the labor supply elasticity in half dampens the effect of all reforms, lowering the overall benefit to 7 percent of GDP. Obviously, labor market reforms are affected the most. Finally, separately decreasing the share of liquidity-constrained consumers to the level observed in the RE block raises the impact of reforms, yielding 13 percent of GDP rather than 12 percent under the basic assumptions.

Dynamic adjustment path of stand alone reforms

59. **The dynamic adjustment paths of real variables in response to reforms in the three markets differ significantly.** While output and employment increase steadily toward their new equilibrium levels in reaction to labor and goods market reform, the initial effects of higher competition in services are slightly negative. The effects on consumption are even more pronounced: consumption exceeds its baseline values immediately after labor and goods market reforms, but remains below baseline for nearly ten years after service market reforms. Investment moves above baseline in all reforms, though very slowly in the case of labor market reforms. The increase in investment is moderate because the relative price of labor to capital falls, which in turn slows down the pace of capital accumulation. In all cases, investment overshoots its long-term steady state level, which is reached once the capital stock needed to produce the higher output has been installed.

Figure 3. Belgium: Stand-alone Reform in Labor, Goods, and Services Markets

(Deviation from baseline in percent; time period = years)



Source: Model simulations with GEM.

60. **In the short run, relative prices and real interest rates play a key role in adjustment dynamics.** In all reform scenarios, the domestic price level falls as firms' margins are squeezed and supply rises ahead of demand.³² With nominal interest rates determined euro area-wide, the real interest rate increases, motivating forward-looking consumers to postpone consumption. With domestic inflation falling below inflation in trade partner countries, the real exchange rate depreciates (nontradables become cheaper relative to tradables), and net exports rise. However, the improvement in the trade balance is insufficient to fully compensate for the shortfall of domestic demand relative to supply. Once the price level adjustment is completed, inflation and the real interest rate return to baseline (the neutral real rate), consumption starts rising above baseline, and investment accelerates, temporarily reducing the trade surplus. Other factors not considered in the model could influence transition dynamics. Reforms might raise uncertainty about income and employment, delaying agents' positive response to the long-run benefits of reform.

61. **Adjustment dynamics are most prominent in the case of service market reforms.** These reforms lead to a sharp decline in enterprise markups, reducing inflation more below baseline than reforms in goods market where Belgium is mostly a price taker. The potential for increased output in the service sector triggers an investment boom. Both effects combine to push real interest rates well above baseline. The effect is so strong that it temporarily depresses consumption and output.

62. **The fiscal adjustment required to deal with the cost of aging is greatly facilitated by labor and product market reforms.** GEM's current capacity to analyze fiscal policy is limited. In the simulations in this paper, the public debt ratio is targeted to be the same in the steady state as in the baseline. The fiscal variable that adjusts is the tax rate on labor. In the combined reform scenario, this tax rate can fall by 2.5 percentage points in steady state. However, it can fall by 3 percentage points during the first year and about 4 percentage points during the first ten years. During this period, the fiscal balance can be lower by 0.3 percentage point of GDP.

Long-run impact and dynamics of reform in the euro area

63. **Belgium would benefit from structural reforms in the rest of the euro area, albeit modestly.** Long-run GDP gains would increase to about 13 percent when both Belgium and the euro area reduce markups in labor and product markets simultaneously. Practically all additional GDP gains are direct spillovers from reforms abroad. Belgium benefits from higher demand for its products, and higher real income, a terms-of-trade effect. As a result, its real GDP would increase by somewhat less than 1 percent. While the long-run increase in Belgian GDP does not go beyond the combined long-run impact of reforms in each country separately, welfare gains are important. The percentage increase in

³² Demand reacts sluggishly because of real and nominal rigidities in the model while the gradual implementation of reforms makes sure that potential output does not jump; this time pattern is entirely plausible for Belgium and the EU as a whole.

consumption over baseline in Belgium is up from 10 percent to almost 11 percent with no additional work effort and a smaller capital stock (Table 4). Consequently, welfare gains at home are bigger.

Table 4. Coordinated Euro Area-wide Structural Reform—
Long-run Impact on Belgium 1/
(Deviations from baseline in percent)

	Real GDP	Consumption	Hours Worked	Capital Stock
Labor market	6.1	6.2	6.8	5.9
Services	3.2	2.1	3.0	4.3
Goods	3.1	2.6	2.3	6.4
All markets	12.6	10.8	12.1	17.4
<i>Of which: spillover from Euro area</i>	0.6	0.7	-0.1	-0.4

1/ GEM simulations. Markups were reduced in Belgium by 19 percentage points in labor markets, 15 percentage points in nontradables, and 5 percentage points in tradables. The markup reductions in the euro area were 13, 13, and 6 percentage points respectively.

64. **The adjustment in demand, wages, and prices is sluggish due to nominal and real rigidities.** When markups are reduced, hours worked and the capital stock will be higher in the long run, and potential output increases. In the presence of adjustment costs in investment, habit persistence in consumption, and nominal rigidities in wages and prices, the reaction of demand is delayed. Consequently, a negative output gap appears and is closed only gradually. The fall in markups causes wages (an important nontradables input) and services (nontradables) prices to fall relatively to third countries, implying a real exchange rate depreciation, either through a nominal exchange rate depreciation or temporary deflation.³³

65. **While monetary policy is neutral in the long run, the adjustment path depends strongly on the stance of monetary policy during the transition.** When markups are reduced only in Belgium, area-wide nominal interest rates fall very little, as the monetary policy rule is formulated in terms of the euro area-wide indicators. Similarly, the euro depreciates very little in nominal terms. As a result, though the stance of monetary policy remains optimal from a euro area-wide perspective, monetary conditions in Belgium tighten, which exerts additional deflationary pressure. While a depreciation of Belgium's real effective exchange rate is needed to balance supply and demand, it must come about through temporary lower inflation at home, further depressing prices and raising the real interest rate. In the presence of nominal rigidities, insufficient monetary accommodation slows down the response of investment and consumption. The improvement in the trade balance does not fully compensate the initial fall in consumption, causing output and employment to drop

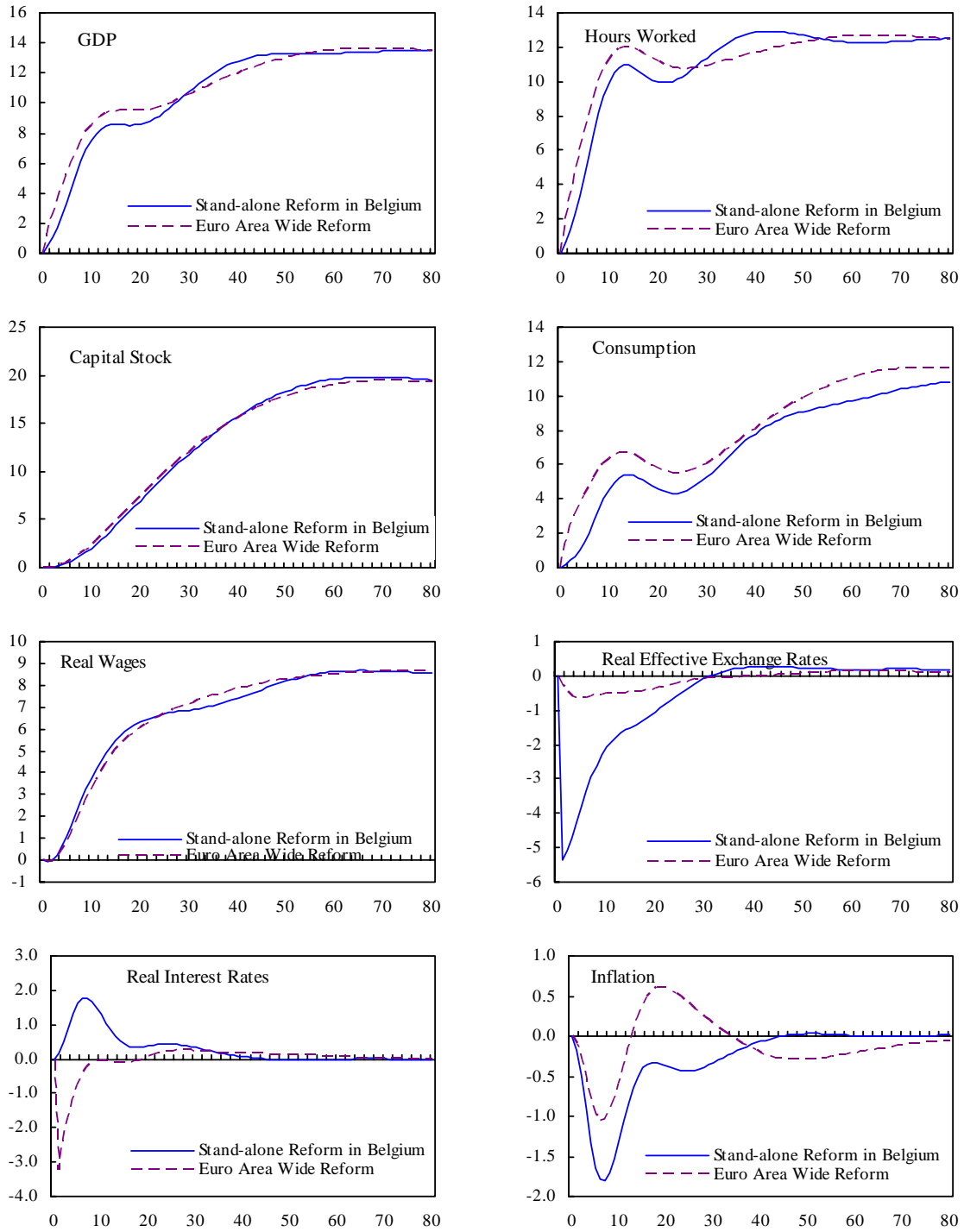
³³ More competition in the tradables sector lowers tradables prices vis-à-vis nontradables prices and therefore represents a real appreciation of the home currency.

below baseline in the first year and the output gap to be more persistent. The transitory adjustment problems peak in the second year and persist for several years until the real interest rate returns to baseline.

66. **Coordination of the timing of reforms in the euro area results in faster adjustment and lower transitional costs (Figure 4).** When markups are reduced in the entire euro area, nominal interest rates fall sufficiently to limit and shorten the transitory deflation. Instead of rising, real interest rates decline in Belgium and the nominal exchange rate depreciates, making a large difference to demand. In the case of synchronized reform, consumption rises by 7.3 percent during the first five years above baseline, compared to 3.6 percent with standalone reforms. The tax rate on labor income can fall by 5.0 percent rather than 4.4 percent and the general government balance can be 0.7 percentage point less, compared to 0.3 percentage point.

Figure 4. Belgium: Stand-alone Reform Versus Coordination

(Deviations from baseline in percent; time period = years)



Source: Model simulations with GEM.

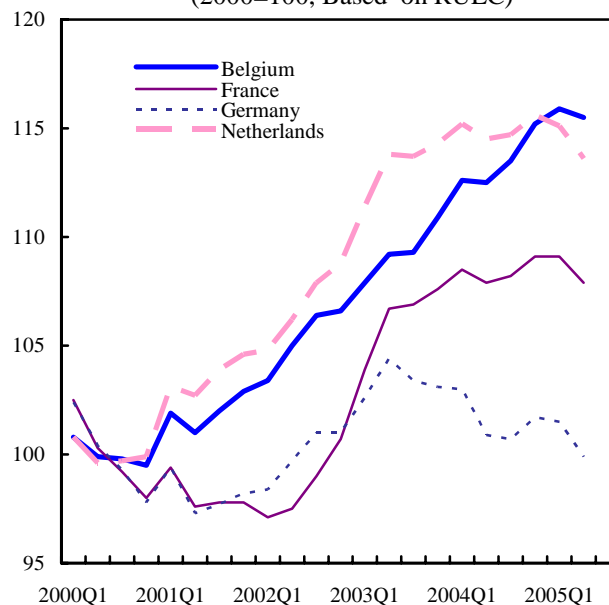
E. Implementing the Reduction in Markups

67. **Translating the generic decline in markups into concrete policy recommendations requires careful analysis owing to potential interactions among reforms.** Conceptually, product market reforms benefit consumers as their real purchasing power increases. However, they also increase competition and reduce producer markups or rents. If this decline cannot be shared with employees, profitability falls, possibly leading to relocation and reduced job creation. There is anecdotal evidence that recent increased global competition has triggered such developments in countries where labor costs could not adjust downward. Conversely, labor market reforms reduce the bargaining power of unions, but if product market competition does not increase, this may lead only to a switch to more labor intensive production and higher profitability and not to more output. Indeed, there is evidence that this mechanism is at work: countries with less competitive product markets, benefited much less in terms of job creation from the wage moderation observed during the past decade (Estevão, 2005).

68. **Taking into account Belgium’s institutions, labor market reforms are necessary to reap the full benefits from product market reforms.** Union power is strong and enshrined in central wage bargaining and wage indexation,³⁴ though it is capped by the existence of the so-called “competitiveness law” which limits wage increases to a weighted average of those in France, Germany, and the Netherlands. This mechanism has not worked well, however, recently leading to an appreciation of Belgium’s real exchange rate at a faster pace than in neighboring countries (Figure 5, REERs). Under these wage bargaining conditions,

benefits from product market reform are likely to remain limited (Blanchard and Giavazzi, 2003). The mechanism is similar as that which makes cuts in employer’s social security contributions ineffective in raising employment. Simulations with a partial equilibrium labor market model (Zhou, 2005) have shown that cuts in social security contributions are only about half as

Figure 5. Real Effective Exchange Rates
(2000=100, Based on RULC)



Source: IMF, IFS.

³⁴ Indexation is to the so-called health index, which excludes prices of motor fuels, tobacco, and alcohol.

effective in creating jobs in a Belgian-style wage bargaining model than in a fully competitive labor market.

69. **Reducing market power in product markets is relatively straightforward.** It requires a further reduction to barriers of entry and more competition. For both energy and telecommunications, while liberalization is advanced, prices to consumers still remain well above those in other countries. Ongoing progress in reducing the administrative burden on enterprises is facilitating enterprise creation but needs to be pursued to catch up with neighboring countries. Liberalization of regulated professions and of international trade in services would also lower product markups.

70. **Lowering markups in the labor market is less straightforward.** Union power is very strong, and outsiders, unemployed or outside the labor force, have little weight. A solution would be for social partners to agree to internalize the impact of their actions on outsiders. This would greatly increase the effectiveness of measures implemented to boost labor demand (e.g., targeted cuts in social security contributions) and labor supply (e.g., reduction in early retirement possibilities). The direction taken with the recently adopted *Generation Pact* needs to be pursued and complemented by other reforms such as the limitation of the duration of unemployment benefits. Changes to the wage-bargaining framework are also likely to be needed. In particular, it needs to be focused on job creation, allow larger wage dispersion, and avoid slow adjustment due to indexation, e.g., by using “all-in” wage agreements.

F. Conclusions

71. **The simulated long-run effects of comprehensive reforms in labor and product markets are large.** Once adjustment is complete, the level of GDP would be higher by 12 to 13 percent, depending on whether reforms are implemented in Belgium alone or in the entire euro area simultaneously. The increase in GDP results from a marginally less than proportional increase in hours worked (12 percent for stand-alone reforms) combined with a stronger-than-proportional increase in capital (18 percent).

- **Belgium should proceed with structural reforms, even on its own, as it would benefit only modestly from reforms in the rest of the euro area.** With Belgium a small player, spill-over effects of its reforms are limited. Fiscal adjustment to deal with the cost of aging would be eased by such reforms.
- **In Belgium, labor market reforms yield the largest output gain, about equivalent to the reforms of the tradable and nontradable markets combined.** This stems from the relatively higher markups in the labor market than in the other markets.
- **The benefits of reform are more evenly distributed when market forces are strengthened in all markets.** Labor market reform alone would lead to a permanently lower real wage, whereas a combination of reform in all three markets leads to a permanently higher real wage. In addition, labor market reform alone would require

hours worked to rise more than proportionally per unit of output. Hence, from a political economy perspective it would be best to proceed with reforms in all markets concurrently.

- **Coordination of the timing of reforms within the euro area would reduce the transition cost of reforms.** Stand-alone reforms in Belgium would cause a sharp increase in real interest rates and a long transition period to higher output as their impact on euro-area wide monetary conditions would be negligible. In contrast, synchronized euro area-wide deregulation would bring about more supportive monetary conditions.³⁵
- **Drawing from the literature on interactions among product and labor market reforms, the dynamic impact could be higher than simulated with GEM while their sequencing and coordination may require careful design.** It is conceivable that labor market reforms may be more effective, the more deregulated product markets are. This channel is not explored in the current version of GEM. The inverse may also be true: if labor markets are very rigid, product market reform may shift rents to workers rather than to consumers.

These quantitative results of the simulations need to be interpreted carefully, apart from their sensitivity to some parameters³⁶, it was assumed that announced reforms are fully credible and that all actors have perfect foresight and complete knowledge of the structure of the economy. Therefore the effects of greater competition are fully anticipated. In reality, reforms might not be credible initially, and there is uncertainty about how the economy will react.³⁷

³⁵ Raising competition represents an asymmetric positive supply shock, when implemented in one country only.

³⁶ Modifying some key calibration parameters does not alter the thrust of the conclusions but widens the range of outcomes. Under the alternatives considered, the effect of stand-alone reforms would range from 7 to 13.3 percent of GDP.

³⁷ Uncertainty leads to caution, including on the side of monetary policy-makers. As a result, monetary conditions may be less than fully accommodative, even in the case of synchronized euro area-wide reform.

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