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FRANCE

Selected Issues

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Approved by the European Department

September 30, 2004

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Executive Summary

The staff's analytical work associated with the 2004 Article IV Consultation of France covers household saving and consumption, the financial sector, and youth unemployment. It draws the following conclusions: The recent strength in consumption is likely to be enduring, but wealth effects are limited, and consumers would benefit from better-functioning mortgage markets. Public interventions in financial markets should be phased out as they hamper the transmission of monetary policy and affect the level and allocation of household savings. Increased training, with its costs shared between workers and employees, is likely to improve the employment experience of low-skilled young workers in France.

Despite its recent decline, French household savings remain among the highest in the OECD, and consumption has been structurally weak. Econometric analysis indicates that in the long-run, consumption tracks disposable income closely but is also affected by wealth effects, which are, however, smaller than in the United States (Chapter I). Housing wealth does not appear to have a measurable impact on consumption owing to constraints on households' access to collateralized credit. In the early 2000s, households delayed spending because of perceptions of high inflation, uncertainties about social security reform, and job losses. With planned reforms of pension and health systems in place and an improved outlook, consumer spending has started to catch up toward its equilibrium level, leaving near-term conditions favorable for healthy consumption growth. For the long run, improving households' access to collateralized credit would allow a better intertemporal allocation of household resources.

The French financial sector is characterized by a large number of state interventions, in particular through administered savings schemes (Chapter II). Econometric analysis shows that sluggish adjustment of administered rates significantly hampered the pass-through of changes in monetary policy rates to consumption credit rates. Owing to this phenomenon, about 1½ percentage point of consumption growth appears to have been temporarily forgone during the recent ECB easing cycle. Sluggish adjustment unrelated to the main administered savings scheme (*Livret A*) causes another 1½ percent of "missing" consumption. Other government interventions could be a key contributing factor.

While France and Germany have similar average unemployment rates, youth unemployment in France (and other industrialized countries) is much higher than in Germany (Chapter III). For the young in France, this leads to a significant loss in time spent working and moderately lower wage growth compared to Germany. A counterfactual exercise suggests that a lower return to experience could be responsible for lower early wage growth in France. "On-the-job" wage growth is higher in Germany than in France, but this does not appear to be due to the higher labor force attachment in Germany. On the other hand, "between-jobs" wage growth contributes similarly to wage growth in both countries. Consequently, increased training could enhance the employment experience of the low-skilled young worker in France provided that its cost is shared between the employer and the employee.

I. HOUSEHOLD CONSUMPTION IN FRANCE[1]

A. Overview and Introduction

1. Household consumption has made a steady contribution to growth in France not only because of its size but also thanks to its resilience with respect to fluctuations in income. Nevertheless, some economists and policy makers in France have argued that consumer spending has been suboptimally low over the past ten years. A number of countries experienced a significant decline in the aggregate private household saving rate, often explained by gains in wealth—the strong increases in stock market values in the second half of the 1990s, and, subsequently, in real estate prices. In France, consumers seem to have reacted differently. The saving rate continued to increase throughout the 1990s and the beginning of the 2000s. Moreover, despite its recent drop, it remains among the highest within the group of industrialized countries.

2. The focus of this chapter is on the determinants and short-term outlook of private consumption, approximated by spending on nondurables and services. An error-correction model was estimated to test the relevance of a number of factors suggested in the literature,[2] such as disposable income, wealth, interest rates, inflation, demographic variables, and the unemployment rate (as a measure of uncertainty). The results suggest that private consumption tracks disposable income closely, but that wealth effects are also significant. However, overall wealth effects in France are smaller than in the United States, and the evidence of an impact of nonfinancial assets (predominantly housing) is weak. Nevertheless, the built-up and burst of the equity-price bubble had a sizeable impact on the propensity to consume out of current income. The evidence with respect to the other factors is mixed: real interest rates and fiscal variables lack significance, or robustness, while the unemployment rate is important for the short-term dynamics of consumption, but not for its trend.

3. The acceleration of private consumption since the second half of 2003 is compatible with the predictions of the estimated equation. Short-term factors, such as the perception of stronger-than-reported price increases after the introduction of the euro notes and coins, and uncertainties about the future of social security had delayed spending, opening up a gap between long-term equilibrium consumption and expenditures. Consumers seem to be catching up on delayed spending, bringing household spending back toward its long-term equilibrium path ("error-correction mechanism"). While the gap between measured and perceived inflation has not yet narrowed significantly, uncertainty has diminished with the

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[1] This chapter was prepared by Werner Schule (EUR).

[2] For a comprehensive presentation of theories of consumer behavior, see Deaton (1992). Muellbauer and Lattimore (1995) provide a detailed overview of the theory and estimation of the solved-out consumption function. Browning and Lusardi (1996) survey micro theories and micro evidence. Attanasio (1998) emphasizes the importance of individual level data to estimate preference parameters.

economic recovery and the implementation of pension and health care reforms, and income support and wage increases at the bottom of the income distribution have buttressed the short-run propensity to consume. Overall, near-term prospects for consumption look bright.[3] Finally, the stock market recovery and the strong housing market are boosting wealth, raising the long-run equilibrium consumption path. Nevertheless, to attain this higher path, it will be necessary to improve the working of consumer credit markets to raise the degree of spendability of housing wealth and strengthen confidence through the pursuit of growth-oriented structural reforms.

B. Modeling Consumption Behavior

4. Financial market imperfections, which prevent consumers from borrowing against future income, are commonly seen as a key reason for incomplete consumption smoothing. An alternative, but not incompatible explanation, focuses on the effects of uncertainties on spending (Carroll, 2001). The precautionary savings model produces behavior similar to the one generated by liquidity constraints: self-imposed reluctance to borrow replaces binding borrowing limits.

5. There have been a number of studies on the importance of excess sensitivity of consumption to current income in France. Campbell and Mankiw (1991) estimated the sensitivity of consumption to current income to be close to one and interpreted this result to imply that virtually all households face liquidity constraints. Sefton and In't Veld (1999) got similar results and concluded that the permanent income model fails to explain French consumer behavior. Evidence is mixed in more recent studies covering the period of the run-up to and after the introduction of the euro, which was also characterized by accelerated financial liberalization. The joint Minefi-INSEE econometric model MESANGE does not include wealth in its consumption function. Likewise, Barell and Davis (2004) concluded that the evidence of wealth effects in France was very weak. Other studies, however, got opposite results. Boone and others (1998, 2001, and 2002) found significant effects on household consumption of changes in the value of equities, real estate, and other assets, with elasticities varying between 0.01 and 0.09. Beffy and Monfort (2003) and Flandrin-Le Maire (2004) confirmed the existence of a long-term cointegration relation between consumption, income, and wealth.[4]

6. This study is based on the life-cycle and permanent income theories, which assume that current consumption is related to life-time resources: the sum of human and nonhuman wealth. The stock of human wealth is defined as the present value of expected life-time labor

[3] Special factors (higher energy consumption due to cold winter weather, a shift in health spending to households and prolonged sales) have also been supportive. To the extent that these factors subside, the recent acceleration in household spending may prove partly temporary.

[4] None of these authors was able to find evidence of changes in the responsiveness of French consumers to equity prices, despite a rapid increase in stock market capitalization.

income. Nonhuman wealth, the stock of tangible assets (A) resulting from decisions made in the previous period, includes financial (F) and nonfinancial assets (H), such as housing.[5] The marginal propensity to consume (MPC) out of life-time resources may vary over time, depending on a number of factors, such as the age structure of the population, income distribution, taxes, interest rates, and uncertainty (for a more detailed presentation see Appendix I). The following relation is derived by maximizing utility under an intertemporal resource constraint:

$$C_t = MPC_t * (Human \quad Wealth_t + Assets_{t-1}) \tag{1}$$

7. Life-time labor income is unobservable, as is the discount rate used to convert it into present value human capital (human wealth). A common assumption is that, at the aggregate level, current real disposable labor income[6] is proportional to expected life-time real labor income[7] (Human Wealth$_t$ = k_t * Y_t). With this assumption, the consumption function becomes:

$$C_t = MPC_t \left(\left(1 + r_t\right) A_{t-1}, k_t Y_t \right) \tag{2}$$

Changes in potential output (trend productivity), as well as taxes, social security contributions, and benefits impact on expected permanent disposable income. All these factors will be reflected in the estimated coefficients of the reduced form equation, captured either in a convoluted way by income and wealth elasticities, or more straightforwardly by other 'control' variables. The following log-linear approximation of (2) will be used for the estimation of long-run consumer demand:

$$c_t = \alpha_0 + \alpha_1 a_{t-1} + \alpha_2 y_t + \Psi \ Z_t + \varepsilon_t \tag{3}$$

where lower case Latin letters represent logs (x=ln(X)), Z_t is a vector of all other variables,[8] and Ψ the vector of associated coefficients. Consumption, income, and wealth variables are in per capita terms.

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[5] Some authors also include consumer durables.

[6] Income derived from the holdings of assets (property income) needs to be substracted from total disposable household income if tangible assets appear as a separate right-hand side variable in the consumption function.

[7] In the two-period example (see Appendix 1), assuming the potential output growth rate equals the real interest rate, the life-time income equals two times current income (with the life time horizon T=2). Alternatively, instead of using the proportionality assumption, Brayton and Tinsley (1996) estimate an econometric model for human wealth. General dynamic equilibrium models calibrate behavioral parameters and solve the model forward. While this allows for a much more rigorous theoretical treatment of consumer behavior, these models are not yet close enough to the data to be used for forecasting.

[8] Such as the unemployment rate, real interest rates, inflation, and demographic variables.

Data issues

Consumption versus consumer expenditures

8. While household spending and consumption of nondurables and services largely coincide, durables consumption (defined as services out of the stock of durables) and purchases of durable consumption goods are typically separate events in time. Aggregation over individual durables purchases removes a substantial part of this difference. Nevertheless, the time-series properties of aggregate durables are very distinct from both consumption and income.[9] Because expenditures on durables are typically made in longer, discrete intervals, similar to investment decisions, habit persistence, and convex adjustment cost are likely to play an important role, and the impact of some determinants (such as financing conditions) on the timing of purchases is likely to differ substantially from its relevance for nondurables consumption. Durables consumption can be expected to be much smoother than respective expenditures on durable goods. Consequently, total consumption can be assumed to follow closely the pattern of spending on nondurables and services. The approximation of total consumption by nondurables spending is unproblematic, as long as the share of durables in total spending is not changing systematically.[10]

Labor and property income

9. The income variable in the consumption equation will be "nonproperty disposable income (YNP)"—defined as private households' disposable income minus income derived from asset holdings: distributed profits, other investment income, net interest, and rent income. This is consistent with the theoretical approach (¶7 and Appendix I).[11] In addition, there are reasons to assume that the short-run MPC out of property and nonproperty income differ significantly, with a short-run MPC out of nonproperty income being by far more important. Assets and derived property incomes are distributed unequally across the population. Households with significant asset holdings are less likely to be credit-constraint or strongly risk-averse. They will be able and willing to smooth consumption over time (the optimal behavior under intertemporal utility maximization). Consequently, current consumption will be little sensitive to fluctuations in property income. In the long run,

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[9] The variance of quarterly changes in durables expenditures is more than four times the variances of either total consumption or income.

[10] This was the case until the mid-1990s, when the decline in relative (and absolute) durables prices provided for an increasing share of real expenditures on durables, at a constant percentage of durables purchases in overall nominal consumer spending. Between 1978 and 2003, the average share of real durables in total consumption was 8.1 percent (see Figure A2 in Appendix I).

[11] Further, there are severe measurement problems linked to the treatment of property income in the national accounts. One of these problems is caused by the distortionary impact of inflation (in particular at high rates) on real after-tax disposable income.

however, unspent income will accumulate and raise the stock of wealth, increasing consumption, given current income. These wealth effects will be captured by the inclusion of assets in the estimated long-run equation (see also ¶¶11 and 12).

10. The share of property income in total disposable income increased from about 3 percent at the beginning of the 1980s to some 9 percent in the early 2000s, when widening margins in the private business sector led to an increase in distributed profits, and income from other investments (including through asset funds) increased strongly. Net interest and rent income played a minor role (Figure 1, upper panel). It is interesting to compare the savings rate as conventionally measured in the national accounts, with the savings rate defined in terms of nonproperty income. The latter did not increase in the 1980s and 1990s, but actually fell (Figure 1, lower panel). This suggests that the increasing share of property income might be among the reasons for the observed increase in the conventional savings rate.[12]

11. Notwithstanding the adjustment, the French savings rate is among the highest ones across industrialized countries, though such comparisons are subject to caveats,[13] so that the question remains which other factors might have prevented a fall in the conventional saving ratio, despite the rise in wealth, and the fall in real interest rates. Moreover, the increase in both saving ratios at the beginning of this decade requires some additional explanations. Candidates include the burst of the stock market bubble, perceived inflation surprises, demographics and increased awareness that welfare promises might not be fulfilled in the future, and hence private precautionary savings might have increased with the risks faced by individual households.

Wealth and consumption

12. Disaggregated annual household wealth data, starting in 1977, have been constructed by the *Banque de France* and INSEE. They were transformed into quarterly figures, following closely the approach presented by Beffy and Monfort (INSEE, 2003).[14] Quarterly financial saving flows and price data for stocks, bonds, and the existing housing stock were used to account for intra-annual wealth accumulation and valuation changes. The upper panel

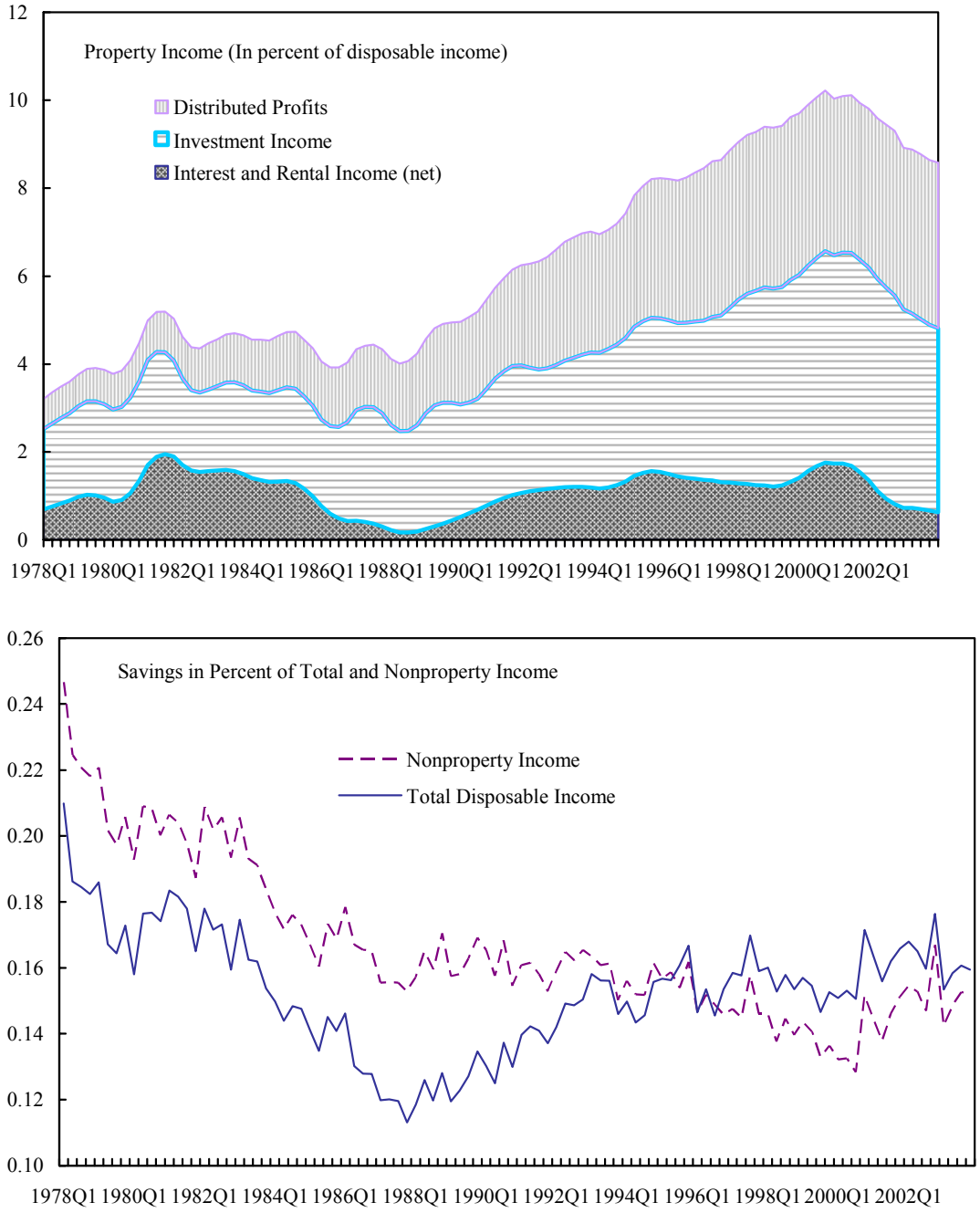
[12] Muellbauer and Lattimore (1995) made a strong case in favor of nonproperty income in modeling consumption, to lower the risk of errors in savings measurement.

[13] Problems of cross-country saving-rate comparisons are discussed in INSEE, "L'économie française 2002/3." Cross-country comparisons of saving ratios are also discussed in "Comparison of Household Saving Ratios—Euro Area/United States/Japan," joint ECB-OECD study, mimeo.

[14] For the years 1978–2000, quarterly measures for household wealth—disaggregated into financial and nonfinancial assets—were graciously provided by Beffy and Monfort. For the years up to 2003, Fund staff updated them on the basis of revised national account data and indicators of the evolution of asset prices.

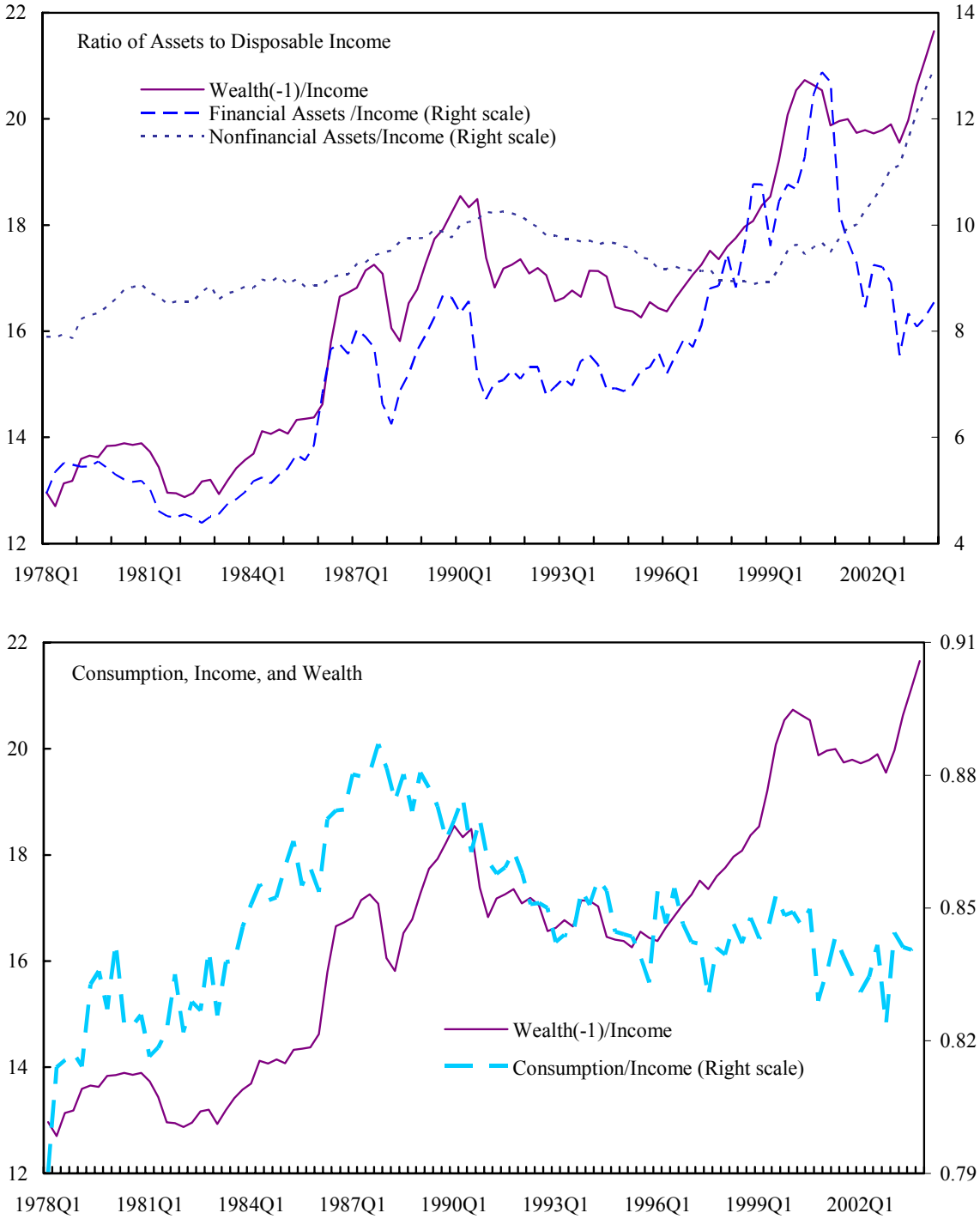
on Figure 2 plots the ratio of total household assets, financial assets, and nonfinancial assets to income. The value of total household asset holdings in percent of annual disposable

Figure 1. France: Property and Nonproperty Income and Savings



Sources: INSEE; and IMF staff calculations.

Figure 2. France: Wealth and Consumption



Sources: Beffy and Monfort (INSEE); INSEE National Accounts; and IMF staff calculations.

income has increased from a factor of 3 at the beginning of the1980s to a factor of 6 in 2000 (Figure 2, upper panel).[15] It has roughly stayed at that level as the decline in stock values from its peak in 2000 was fully offset by increasing real estate prices.

13. From the end-1970s to the mid-1990s, the ratio of consumer expenditures to income and the asset to income ratio moved closely together. However, the stock market boom of the 1990s was not followed by a significant increase in spending, and by the end of the 1990s, a sizeable gap between the two ratios had opened up (Figure 2, bottom panel). There are several possible explanations for this divergence: (i) the long-term relation between wealth and consumption might have broken down. A possible reason for this could be that the very sharp increase in stock prices, and later in real estate prices, has been perceived by households as a temporary aberration, not as an increase in permanent resources; (ii) financial assets are more likely to lead to consumption because they are easier to liquidate, therefore the two wealth components should be 'spendability' weighted;[16] (iii) there is no structural break in the long-term consumption-wealth relation, but due to factors driving the short-term adjustment process, a significant equilibrium gap might have opened up and could be followed by a fall in the savings ratio, if consumption follows an error-correction process.

Estimating a consumption function

14. The following long-run consumption equation in log levels was estimated using the Stock-Watson procedure with a standard k=2 lag and lead structure.[17] The estimation period was 1982:1 to 2003:4. The standard errors (in brackets) are adjusted for long-term variance.[18] The coefficients for income and the two wealth components were restricted to sum to unity, a restriction that was not rejected at the 5 percent level.[19]

$$\ln(cn_t) = c_0 + \underset{(0.024)^*}{0.927}\ln(y_t) + \underset{(0.018)}{0.019}\ln(h_t) + \underset{(0.011)^*}{0.053}\ln(f_t) - \underset{(0.191)^*}{0.491}\,\pi_t - \underset{(0.027)^*}{0.054}\,a65_t + \varepsilon_t \qquad (4)$$

with
- cn_t = real consumer expenditures on nondurables and services per head
- y_t = real nonproperty disposable income per head
- h_t = nonfinancial assets per head
- f_t = financial assets per head

[15] Figure 2 shows the ratio of W to quarterly Y.

[16] As suggested by Muellbauer/Lattimore (1994).

[17] See Stock and Watson (1993).

[18] The "*" indicates significance at the 5 percent level.

[19] The F-test statistic was F(1,54)= 4.78; (p=0.033).

π_t = annual inflation rate, implicit price deflator of cn
$a65_t$ = age group of 65 years and above in percent of population

15. The estimated short-run equation shows the growth rate of consumption as a function of lagged income and consumption growth, the change in the rate of unemployment, and the lagged error correction term (ECT), which is significant and correctly signed, but the adjustment speed is unusually high, implying that about half of the disequilibrium gap will be closed after one quarter.[20]

$$\Delta_1 \ln(cn_t) = c_0 + \underset{(0.06)^*}{0.19} \Delta_1 \ln(y_{t-1}) \underset{(0.002)^*}{-0.006} \Delta_1 UR_{t-1} \underset{(0.002)^*}{-0.28} \Delta_1 \ln(cn_{t-1}) \underset{(0.16)^*}{-0.53} ECT_{t-1} + \nu_t \quad (5)$$

with UR = unemployment rate
ECT = error term from long-run equation

16. The main results are:

- Current income has been the most important determinant of consumption, which is suggestive of either the presence of liquidity constraints faced by consumers in imperfect credit markets (due to regulation or asymmetric information), or strong risk aversion on the side of French consumers leading to precautionary behavior in the presence of uncertainties with respect to future income and needs.

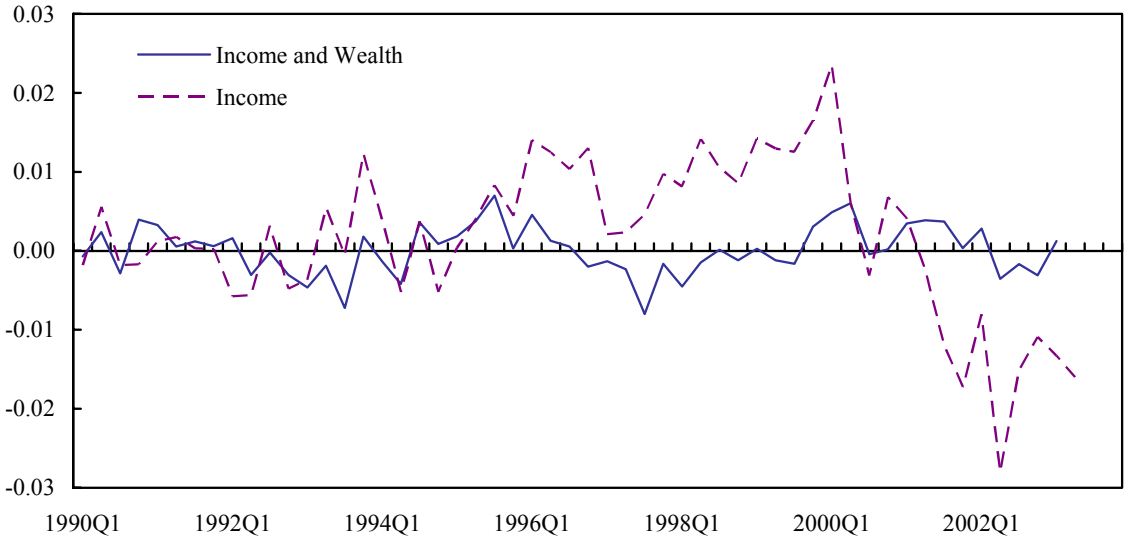
- Wealth was found to be another important determinant of consumption. Its importance can be gleaned from Figure 3, which shows the error terms of long-run consumption equations including and excluding wealth. Adding wealth significantly improves the fit of the equation.

- The wealth effect is smaller than for instance in the United States. The MPC out of total wealth is 2.7 cents per euro, compared to 4 cents per dollar frequently estimated for the United States.[21] The estimated elasticity of consumption with respect to nonfinancial wealth (predominantly housing) was only about a third of the elasticity with respect to financial wealth and statistically not significant at the 5 percent level. The implied MPC out of financial wealth alone was 2 cents per euro (over the 1990-2003 period, the average share of financial in total assets was 47 percent).

[20] The equilibrium error was significant and negatively signed in all short-run equations tested. However, the adjustment speed varied between -0.2 and -0.6 depending on which variables were included in the long-run equation. The inclusion of inflation in particular resulted in a shorter reaction time.

[21] The MPC were calculated on the basis of the average wealth-consumption ratios over the period 1990–2003. The impact of nonfinancial wealth is not significant at the 5 percent level.

Figure 3. Wealth Effect on the Error-Correction Term 1/



1/ Residuals (estimation period 1982 Q1 to 2003 Q4).

Nevertheless, given the large size of changes in wealth, the effect on consumption has been important.

- The results for real interest rates were inconclusive; coefficients were often insignificant, unstable, and sensitive to the calculation of real interest rates.[22]

- The negative coefficient of inflation was robust with respect to its definition as well as over time. The inclusion of inflation resulted in a weaker wealth effect and a more rapid speed of adjustment to the equilibrium error in the short-run equation.[23]

- Aging, measured by an increasing share of people above the age of 65, had a significant but not very robust, small negative effect on consumption.

- The level of unemployment was not significant in the long-run equation, but its changes had a negative effect on the growth rate of consumption.

- Neither real public debt nor the public deficit-to-income ratio were found to be significant.[24]

[22] This may be due to problems in measuring expected inflation, but is also consistent with the ambiguous predictions of theory on the impact of the real interest rate on consumption.

[23] The negative effect of inflation is a well known phenomenon; see Hendry (1994) on the effect in the Davidson-Hendry-Srba-Yeo (1978) consumption function. The reduction in the size of the wealth effect indicates that the inflation variable might be picking up the impact of higher inflation on the real value of nonindexed assets.

Reported and perceived inflation

17. There are a number of possible explanations for the negative impact of inflation on consumption: first, the level and variability of inflation are positively correlated, therefore the inflation rate might capture uncertainties regarding real income and wealth; second, higher inflation rates cause nonindexed assets to depreciate; third, with low variability in nominal interest rates of a large part of the portfolio of private households, changes in inflation dominate the variations in the real interest rate. In this case, the negative sign for inflation would indicate that the income effect of real interest rates outweighs the intertemporal substitution effect for French consumers. However, the ambiguous results on real interest rates cast doubt on this interpretation. And finally, the negative inflation effect might be partially spurious, due to distortions produced by the interplay of inflation and the measurement of income in the national accounts. However, these distortions should be largely absent in nonproperty income.

18. Whatever the reason for the significance of inflation might be, the estimation reflects the average reaction of consumption on measured inflation in the past. Obviously, the rate of inflation perceived by consumers sometimes differs significantly from officially measured rates. The perception of an inflation rate significantly above the reported one after the introduction of the euro notes and coins on January 1, 2002 (Figure 4) has been attributed to sharp price increases in some highly visible consumption goods and services. It is likely to have discouraged consumption temporarily. Given the size of the inflation coefficient, the effect might have been large: a 1 percentage point transitory increase in perceived inflation could have resulted in a 0.5 percent drop in target consumption. Once the high inflation perception disappears, consumption is likely to catch up with the level determined mainly by income and wealth.

19. Given the way the consumer survey covering price-trend perceptions over the past 12 months is designed, it is difficult to link the survey data to a specific inflation rate. Consumers are asked the question: “How do you think that consumer prices have developed over the last 12 months?” They are then asked to choose between five possible answers, ranging from “risen a lot” to “fallen”. No specific price index is mentioned, nor do the answers give a precise number of the rate of inflation as seen by the households. However, the close correlation between the perceived price trends over the past 12 months and actual inflation rates until 2001 suggests that perceived inflation in 2002–03 has been higher than reported inflation. On the basis of an ad hoc equation, the forecast for 2002–03 inflation rates

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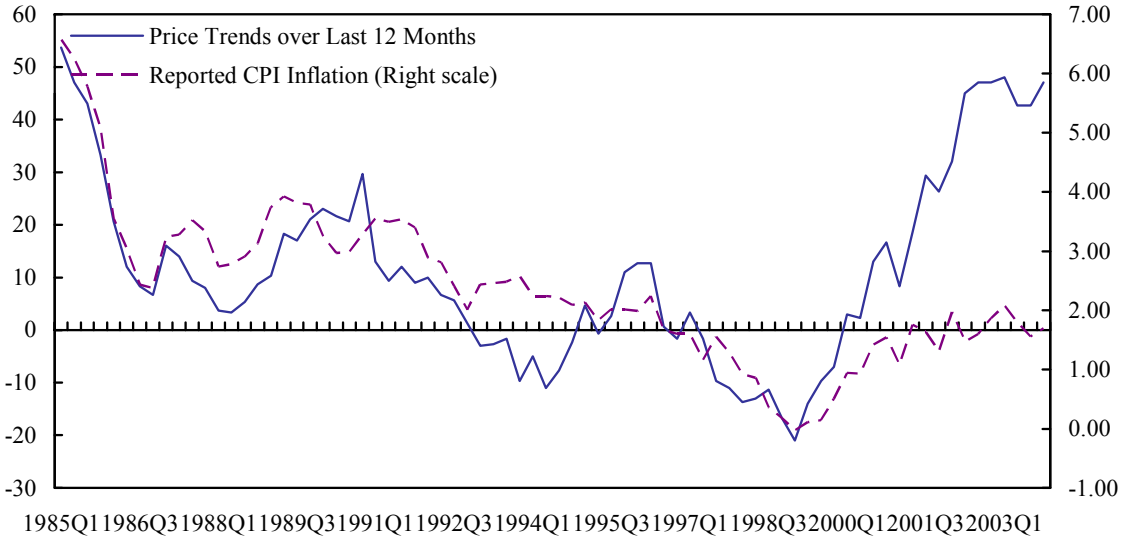
[24] De Serres and Pelgrin (2003) have identified public-sector savings as an important determinant of the household savings rate in a dynamic panel study across OECD countries. Cross-country panel equations have generally been more successful in finding evidence of partial Ricardian equivalence than aggregate time series studies. Berger and Daubaire (2004) confirm a Ricardian effect across OECD countries.

Figure 4. Inflation Perception



Sources: European Commission, Consumer Survey; and INSEE.

as perceived by households were 3.5 percent and 4.3 percent.[25] This combined with the estimated semi-elasticity in Equation (4) implies that consumption was depressed by 0.9 percentage points in 2002, and 1.3 percentage points in 2003 due to the perception of a hike in prices after the introduction of euro notes and coins.

Demographic developments

20. In line with the life-cycle theory, Beffy and Monfort (2003) found evidence for an increase in the saving ratio, caused by a demographic shift in the French population, when the cohort of baby boomers was reaching prime earning age. Earlier studies looking at the relation between age cohorts and consumption in France, however, could not confirm the predictions of the life-cycle theory. Using survey data, Fall, Loisy, and Talon (2000) found that total assets increased steadily in relation to age, even after retirement. Moreover, they noticed an increase in the savings ratio after retirement in the 1980s, and for the 1995 survey a decline in the savings ratio around the age of 60, but a rebound for the age group of 70 and higher. De Seres and Pelgrin (2003) also found a negative relation between the old age dependency ratio[26] and consumption in a system of dynamic panel equations. Bodier (1999)

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[25] The equation estimated from 1985:q1 to 2000:q4 is: $\pi_t = \alpha_0 + 0.016 * \pi^{perceived} + 0.77\pi_{t-1}$. A static equation (perceived inflation being the only explanatory variable) would forecast even larger inflation discrepancies (2.9 and 3.8 percentage points).

[26] Defined as the age group of 65 and above in percent of the working-age group.

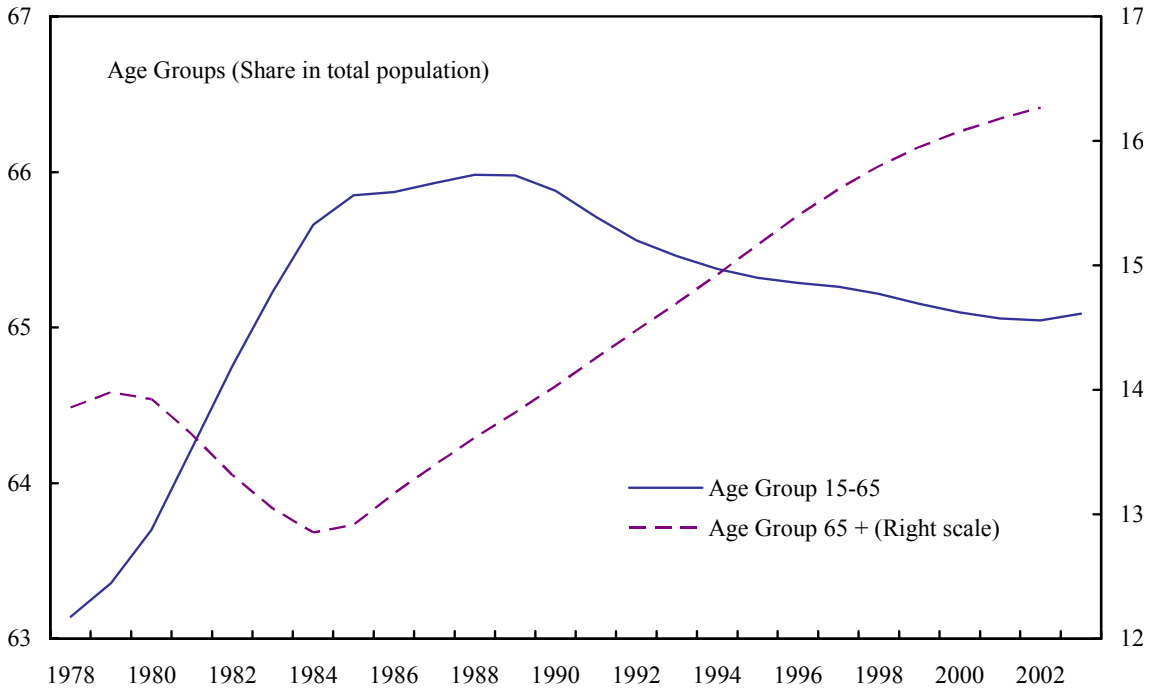
estimated a small effect of aging on overall consumption, but a larger effect on the structure of demand for goods and services.

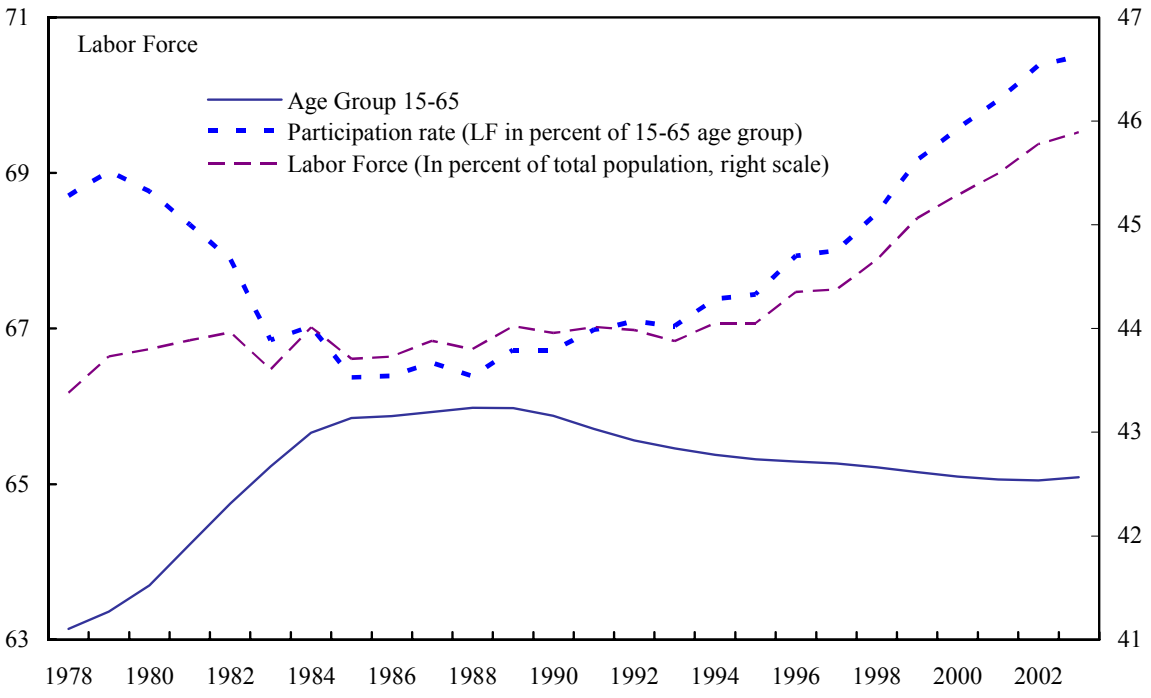
21. Aging in France is already visible (Figure 5). The share of citizens aged over 65 in the total population has been increasing since the mid-1980s, while the share of people of working age passed its peak at the end of the 1980s. Nevertheless, the labor force has continued to grow due to a significant rise in the participation rate. The empirical investigation looked into the impact of three variables reflecting the shift in the population structure: the old age dependency ratio (the age group of 65 and above in percent of the working-age population), the working-age population in percent of the total population, and the labor force in percent of the total population. The coefficient on the age 65+ group was small, significantly negative, but somewhat fragile. The results for the group of working-age people and the labor force variable were positively signed, but the coefficient was neither very significant nor robust across different specifications or over time.

22. The negative impact of an increase in the share of older persons in total population contradicts the implications of the life-cycle theory, according to which aging or a shift in the distribution of assets towards the older generation increases the aggregate MPC out of total assets.[27] However, bequest motives and the precautionary asset holdings due to uncertainties of the remaining life time are likely to significantly reduce this effect. In addition, consumption and leisure may be substitutes, increasing the likelihood of a negative effect on the MPC out of income and wealth. To the extend that early retirement is motivated by a favorable utility value of leisure compared to consumption, raising the effective retirement age, through incentives to work longer, would not only increase income (and hence consumption), but could also result in a higher MPC out of this higher income level.

[27] Other demographic variables, such as the age group between 15 and 65, were used alternatively with a significant (but positive) impact on consumption.

Figure 5. France: Demographic Developments





Source: AMECO Database.

C. Conclusions

23. Income and wealth are the main determinants of consumption in France. The close relation between current income and consumption is indicative of shallow consumer credit markets. This conclusion is confirmed by the relatively small, and only weakly significant, impact of nonfinancial—mainly housing—wealth. Facilitating access to U.S. style home equity loans, relaxing ceilings on lending rates, and lowering transactions costs (e.g., on mortgage financing) would improve households' ability to smooth consumption.

24. With more efficient financial markets, expectation of future income and consumption needs will likely play an increasing role in current consumer expenditure decisions. The likelihood of a negative impact of real interest rates would rise with the increasing importance of intertemporal decision-making, improving the effectiveness of monetary policy.

25. A determined structural reform program, aimed at raising potential output, could succeed in strengthening confidence. Raising the effective retirement age would presumably increase the MPC out of both current income and wealth.

26. The weakness of consumption in 2002 has probably been accentuated by the perception of sharp price increases after the introduction of the euro notes and coins, attributed to the experience with daily, small expenditure items, such as certain food products and services. The decline in stock market values also depressed consumption. The fall in the savings ratio in 2003–04 is consistent with households catching up with equilibrium consumption, equity prices well off their lows, and support for low incomes. Once inflation perceptions return to normal, the savings ratio is likely to decline further. However, special and confidence factors–which are difficult to capture–may also have played a role.

The Solved-out Consumption Function

27. The workhorse model of consumer behavior is derived from the basic idea that maximizing utility under resource constraints will lead to consumption smoothing, relative to current income.[28] The first-order condition for maximization, the Euler equation, states that the marginal rate of substitution between period one and period two consumption (c_1 and c_2) should be equal to the relative price of today's compared to future consumption, the ratio of the subjective discount factor (1+δ), and the market interest rate factor (1+r). A useful illustration of this condition is derived under the assumption of inter-temporal additivity of utilities and a CES utility function (U):

$$U = c_1^{-\rho} + \frac{1}{1+\delta} c_2^{-\rho} \tag{1}$$

28. The two-period budget constraint, with no bequests, states that life-time consumption equals life-time resources, the initial wealth endowment plus present and discounted future income:

$$c_1 + \frac{1}{1+r} c_2 = A + y_1 + \frac{1}{1+r} y_2 \tag{2}$$

The first-order condition Euler equation takes the form:

$$\left(\frac{c_2}{c_1}\right)^{\frac{1}{\sigma}} = \left(\frac{1+r}{1+\delta}\right) \tag{3}$$

where the inter-temporal elasticity of substitution $\sigma = 1/(1+\rho)$, the reciprocal of the coefficient of relative risk aversion ρ, measures the response of consumption to changes in intertemporal prices. If the incentive to wait (1 + r) overcomes impatience (1 + δ), it pays to postpone consumption, and consumption will grow over time, given permanent income.[29]

29. Combining the first-order condition with the budget constraint leads to the solved-out consumption function:

$$c_1 = \frac{1}{m_1}\left[A_0 + H_1\right] = \frac{1}{m_1}\left[A_0 + y_1 + \frac{1}{1+r} y_2\right] \tag{4}$$

where

[28] Consumption smoothing is the basic underlying idea of both the life-cycle hypothesis and the permanent income theory of consumption.

[29] Deaton (1992), Chapter I.

$$m_1 = 1 + \left(\frac{1}{1+\delta}\right)^{\sigma} \left(\frac{1}{1+r}\right)^{1-\sigma} \tag{5}$$

The marginal propensity to consume (MPC) out of total wealth—asset holdings plus human wealth is in general not a constant, as it reflects a geometrically-weighted average of time varying subjective discount rates and market interest rate, where the weights are given by the inter-temporal elasticity of substitution. Assuming expected income is growing at rate *g*, then the consumption function becomes:

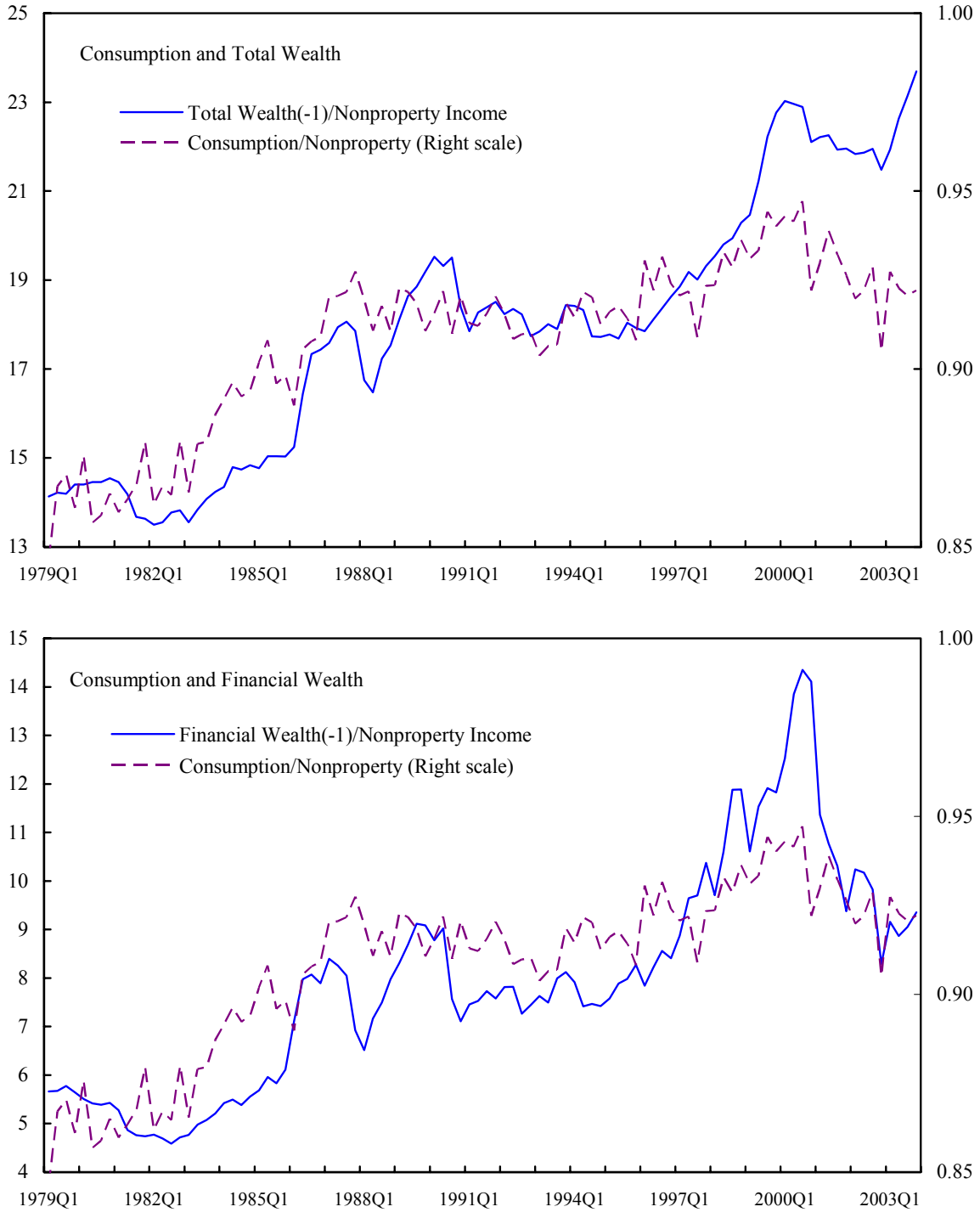
$$c_1 = \frac{1}{1+\left(\frac{1}{1+\delta}\right)^{\sigma} \left(\frac{1}{1+r}\right)^{1-\sigma}} \left[A_0 + y_1 \left(1 + \frac{1+g}{1+r}\right) \right] \tag{6}$$

30. The simple two-period model has some interesting implications, which help interpret the result of the estimations. It can easily be extended to the multi-period case, with implications for the effects of the economy's age composition, and to include a variety of terms, which work predominantly through their impact on the MPC. Uncertainties about noninsured risk to income, for example, could be represented by a factor added to the subjective discount rate, lowering the MPC. Alternatively, the precautionary motive implies that savings increase (given income) when the level of asset holdings is considered no longer adequate to buffer consumption against bad shocks. The tug-of-war between impatience and prudence defines a target level of precautionary wealth. The balance is shifting towards a higher asset-holding target with increased uncertainties.[30]

31. The impact of the real interest rate on consumption depends on the initial asset position, the rate of income growth, and the degree of intertemporal substitution. The different channels, through which the real interest rate affects consumption work in opposite directions, and the resulting overall effect is likely to be small. Moreover, the ratio of assets to income is shifting over time, making the effect of real interest rates on consumption unstable.

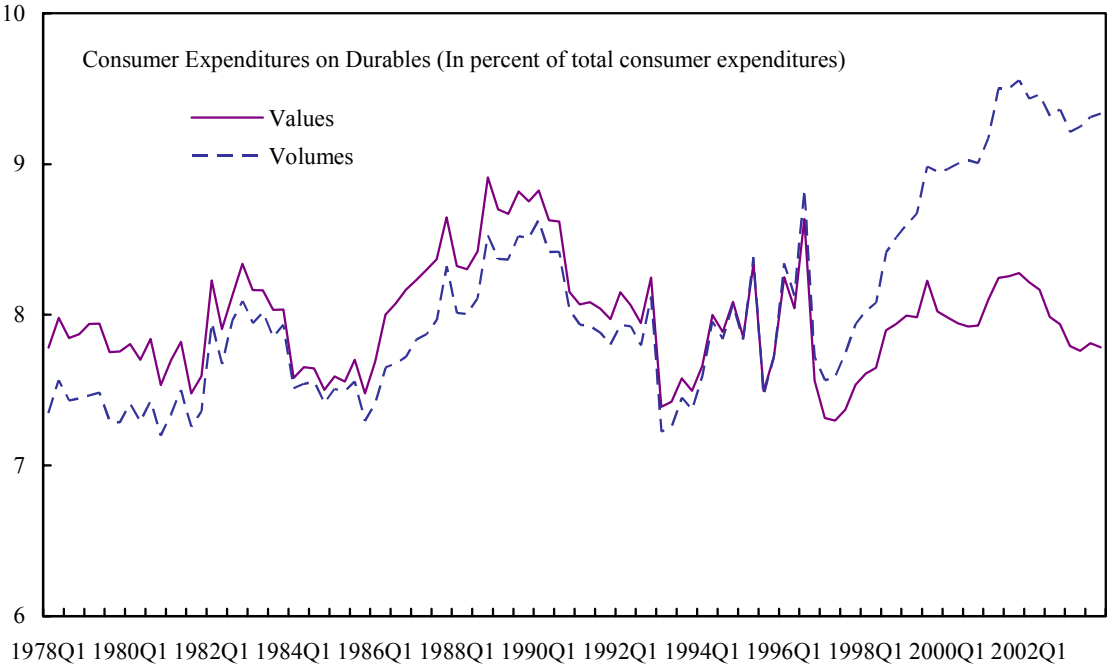
[30] Increased uncertainties might also lead to higher investment into human capital; Carroll (1992) finds that the increased divorce risk in the United States motivated women to spend more time in education.

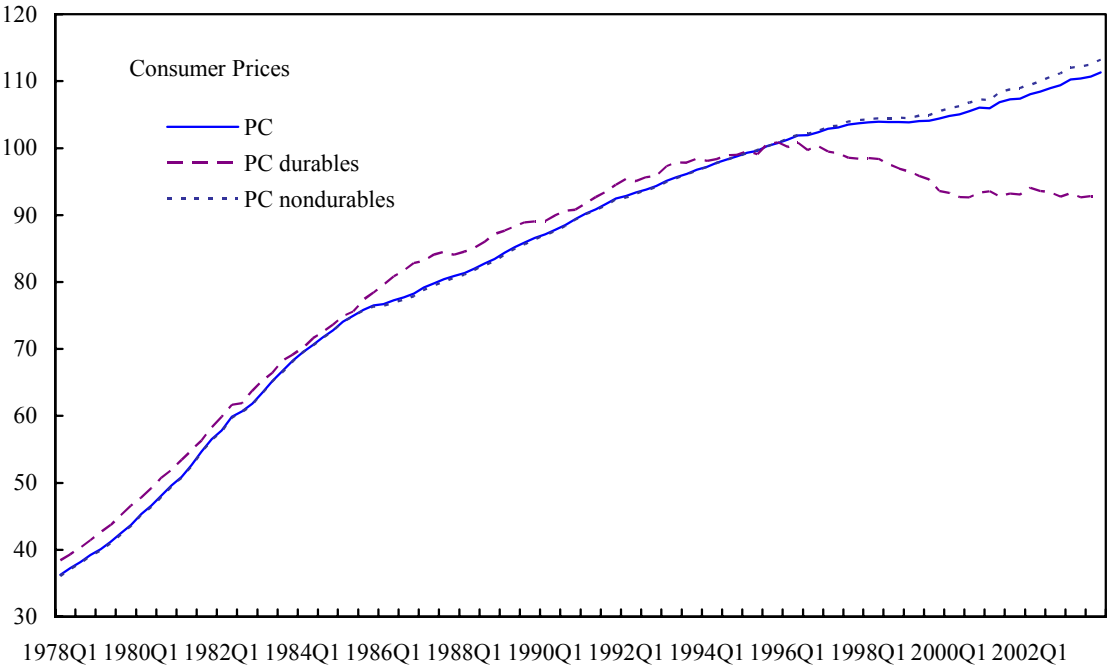
Figure A1. France: Wealth and Consumption



Source: IMF staff calculations.

Figure A2. France: Durables





Sources: INSEE; and IMF staff calculations.

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II. Public Intervention in Financial Markets: Obstacles to Monetary Transmission?[31]

A. Introduction

32. The liberalization of France's financial sector since the second half of the 1980s should have improved the transmission of monetary policy to the real economy. However, the financial landscape in France remains characterized by a large number of idiosyncrasies—many of which caused by government policies—that affect monetary transmission. This paper aims at providing a comprehensive overview of these idiosyncrasies and their likely or potential impact on the transmission of monetary policy. It is not exhaustive, however, as the investigation of a wide range of specific features necessarily limits the set of available analytical tools. A general equilibrium analysis, for example, did not seem feasible.

33. The empirical analysis focuses on two particular aspects of monetary transmission: the transmission from policy interest rates to the interest rates faced by economic agents and an analysis of the interest rate sensitivity of household consumption. The first aspect was chosen because government interventions play a direct role in this crucial link in the transmission mechanism, the second because the literature suggests that French consumption is relatively insensitive to monetary policy. Although government interventions in financial intermediation impact resource allocation in ways that are often closely interrelated with the transmission of monetary policy, the focus here is on aspects of the latter.

34. Section B anchors the paper in the literature on cross-country heterogeneity of monetary transmission in the euro-area with a view to assessing, at the aggregate level, the relative strength and functioning of the transmission channels in France. Section C reviews the relevant French idiosyncrasies that we were able to identify, and discusses their potential effects on monetary transmission, following a deductive approach. Section D econometrically quantifies the interest rate transmission and the effect of interest rates on private consumption. Section E concludes and discusses options for reform.

B. Literature Overview

35. The literature usually identifies four main channels in the transmission mechanism of monetary policy (for example, Mishkin (1995); Kamin, Turner and Van't Dack (1998); and Kuttner and Mosser (2002)): the interest rate channel, the exchange rate channel, the asset price channel, and the credit channel (Table 1).

[31] This chapter was prepared by Céline Allard (EUR) and Wim Fonteyne (MFD).

Table 1. Theoretical Monetary Policy Mechanisms—Illustration in the Case of Monetary Policy Loosening

	Households (consumption, housing investment)	Firms (investment, exports)	Conditions of Application
Interest rate channel			
Substitution effect	↑	↑	No liquidity constraints
Income effect	↑/↓	↑/↓	Depending on the net financial position
Exchange rate channel	-	↑	Flexible exchange rate and large foreign exposure of activity
Asset price channel	↑	↑	Firms with large financing in stock markets
Credit channel	↑	↑	
Aggregate impact	↑/↓	↑	

Source: IMF staff.

- The **interest rate channel** is the key mechanism underpinning counter-cyclical monetary policy. It comprises two distinct effects:
  - A contractionary (expansionary) monetary policy modifies the relative price of current and future goods and services, inducing economic agents to postpone (advance) consumption and investment, provided they do not face liquidity constraints. This is the **substitution effect**.
  - The **income effect** refers to the changes monetary policy generates in the disposable income of households. These changes have a sign that is dependent on the household sector's net position: lower interest rates increase the available income of net borrowers and reduce that of net savers. Depending on the aggregate characteristics of a country's economic agents (net savers or borrowers), this income effect can on aggregate be positive or negative.

- The **exchange rate channel** is caused by the modification a change in monetary policy brings about in the relative rates of return between domestic and foreign currency denominated assets. In a context of flexible exchange rates and an open capital account, a loosening of monetary policy tends to put downward pressure on the domestic currency. This in turn alters the relative price of domestic and foreign goods and services, stimulating exports and activity. However, to some extent the exchange rate effect could be mitigated by developments in other asset markets. For example, lower interest rates could push up equity prices and improve the attractiveness of FDI, thus triggering capital inflows that tend to push the exchange rate up.

- The **asset price channel** refers to two distinct effects. First, changes in monetary policy tend to have an impact on equity prices and thus on the ratio of the market value of firms to the replacement cost of their capital stock (Tobin's Q). This in turn determines the incentives for firms to invest using the proceeds of equity issuance. Second, through its impact on the valuation of assets, monetary policy also has an effect on the intertemporal savings plans of households: higher asset prices make them feel wealthier and less in need of additional savings (wealth effect).

- The **credit channel** emphasizes the impact of monetary policy changes on asymmetric information in bank lending. With higher interest rates, the value of collateral used to secure borrowing and the net present value of expected future cash flows are revised downwards, and as banks perceive the financial health of certain agents relying more on borrowing—principally small and medium enterprises—as deteriorating, they tend to be more reluctant to lend to them.

36. The literature sometimes identifies additional channels. One of the most important among these is the expectations channel[32], which refers to the effect that monetary policy announcements and actions have on economic agents' decisions by influencing their expectations. This channel is not discussed in detail here, because it is less obvious how national idiosyncrasies could affect its functioning, other than through mechanisms which affect the other channels as well.

37. To empirically evaluate the aggregate impact of monetary policy on the real economy and the relative weights of the various transmission channels, the literature offers two different methodologies: macro-econometric models and structural VAR models. Using these two tools, various studies have compared the impact of monetary policy across euro-area countries:

- **Macroeconometric models point to a somewhat smaller reaction to monetary policy in France than in other large euro-area economies** (Table 2). Van Els and others (2001), using national central bank models under common assumptions and forward-looking behavior throughout the euro area, find that French economic growth is reduced by 0.28 percentage points after a 100 basis point hike that is sustained for two years. In the euro area as a whole, growth is reduced by 0.38 percentage points. Germany, Italy and Spain all exhibit a larger reaction, the effect in the two latter countries being more than twice that in France. However, the lags with which monetary variables impact the real economy are relatively similar, with the maximum impact generally reached after two years. Differences in specification in the national models may explain part of the differences in results, though McAdam and Morgan (2001) reach a similar conclusion using the multinational NIGEM model. National models used by the French authorities also yield comparable results, even though they do not take into account links between euro-area economies (Baghli and others (2003)).

- **Structural VARs suggest a relatively higher sensitivity of the French economy, but raise cross-country comparability issues** (Table 3). Mojon and Peersman (2001) find the impact on GDP of a one standard deviation monetary policy shock in

[32] See, for example, Bank of England (1999).

Table 2. France: Maximum Effects of Monetary Policy Shocks on Output: Cross-Country Comparisons From Macroeconometric Models Available in the Literature 1/

Studies	Assumptions	Models used	France	Germany	Italy	Spain	Belgium	Netherlands	Finland	Austria	Ireland	Portugal	Euro Area	
													Aggregated Results	Single Estimation
Macro-econometric models : impact of a 100 basis point hike sustained for two years														
van Els and others (2001)	exchange rate determined by uncovered interest parity condition - no fiscal or monetary rules forward-looking long-term interest rates	national central banks models	-0.28 (2 years)	-0.33 (2 years)	-0.60 (2 years)	-0.62 (3 years)	-0.20 (2 years)	-0.27 (3 years)	-0.34 (1 year)	-0.49 (3 years)	-0.48 (2 years)	-0.81 (3 years)	-0.38 (2 years)	
Mc Adam and Morgan (2001)	exchange rates and long-term interest rates forward-looking -	ECB euro area model												-0.86 (2 years)
	fiscal and monetary policy rules	NIGEM	-0.29 (2 years)	-0.34 (2 years)	-0.34 (2 years)	-0.41 (2 years)	-0.18 (2 years)	-0.27 (1 year)	-0.36 (2 years)	-0.45 (1 year)	-0.28 (1 year)	-0.17 (1 year)	-0.31 (2 years)	
BIS (1995)	exchange rate backward-looking, nominal rates within the ERM only frozen for Germany, France, the Netherlands, Belgium, and Luxembourg no fiscal or monetary rules	national central banks models	-0.36 (2 years)	-0.37 (2 years)	-0.53 (2 years)	-0.17 (5 years)	-0.23 (3 years)	-0.18 (2 years)		-0.14 (2 years)				
Baghli and others (2003)	exchange rate determined by uncovered interest parity condition long-term interest rate forward-looking no fiscal or monetary rules no feedback from other euro-area countries	MASCOTTE *Banque de France*'s model	-0.24 (3 years)											

1/ The number of years after which the maximum effects of the shock materialize are indicated in parenthesis.

Table 3. France: Maximum Effects of Monetary Policy Shocks on Output: Cross-Country Comparisons from VAR Models Available in the Literature

Studies	France	Germany	Italy	Spain	Belgium	Netherlands	Finland	Austria	Ireland	Portugal	Euro Area	United States
VAR models: impact of one standard deviation monetary policy shock												
Mojon and Peersman (2001)	-0.20	-0.20	-0.12	-0.14	-0.32	-0.45	-0.44	-0.25	-0.32			
Peersman and Smets (2001)											-0.15 (30 bp) 2/	-0.18 (45 bp) 2/
Peersman (2001) 1/	-0.19	-0.28	-0.17	-0.22	-0.18	-0.11		-0.17				
Barran, Condert and Mojon (1997) 1/	-0.46	-0.65	-0.30	-0.55		-0.35	-0.36	-0.48				
Peersman and Smets (1999) 1/	-1.15	-0.87	-1.85		-1.80	-1.00		-0.93				
VAR models: impact of a 100 basis point interest rate hike												
Bouscharain, Herbet, and Menard (1999)	-1.1	-0.8	-0.6			-0.7						

1/ Quoted from Mojon and Peersman (2001).
2/ Size of the shock in basis points.

France to be close to the euro-area average. In fact, the large estimated confidence bands they find do not allow them to conclude that the aggregate effects of monetary policy are significantly different between countries. However, by construction, the link between the interest rate variations and the magnitude of the monetary policy shock estimated in the VAR is not straightforward and differs from country to country. Therefore, on the basis of these VAR exercises, it is difficult to compare sensitivity to monetary policy under the (now prevailing) constraint that changes in policy interest rates are the same in all countries. Only Bouscharain and others (1999) specify their shock so as to generate the same interest rate variation in every country, and find the French economy to be the most reactive among the five European countries in the study, including the United Kingdom.

38. **In all models, the exchange rate effect dominates in the short run, domestic channels becomes more important in the medium run, and the main impact is on investment rather than on consumption, which reacts little and slowly.** Mc Adam and Morgan (2001) estimate that, out of a total impact of -0.31 percent an interest rate increase has on activity after two years, the impact on the cost of capital accounts for -0.10 percent, while the direct interest effect on consumption explains a mere -0.03 percent, the rest stemming from a combination of income, wealth and exchange rate effects. In the same vein, Peersman and Smets (2001) find the magnitude of the effect on investment to be three times as large as the magnitude of the effect on GDP. A similar conclusion is drawn by Angeloni and others (2003c), who also show that this result contrasts sharply with the one for the U.S. economy, where household consumption and investment in residential real estate are important factors.

39. **Although evidence is mixed, consumption in France could be even less reactive to changes in monetary conditions than it is in other euro-area countries**. While van Els and others (2001) find that monetary policy's impact on consumption in France is stronger than the euro-area average, they note that this is a new result, which had not been found during a previous exercise in 1995 (BIS, 1995).[33] They also find that the income effect has become less important and suggest that the financial liberalization of the late 1980s could explain why the substitution effect became significant only recently. Conversely, France is, with Spain and Germany, one of the countries where the empirical evidence of wealth effects was too weak for such effects to be incorporated in the national central bank models. In the VARs estimated by Bouscharain and others (1999), the aggregate effect is larger for France, but the reactivity of private consumption is, with Germany, the lowest of the sample.

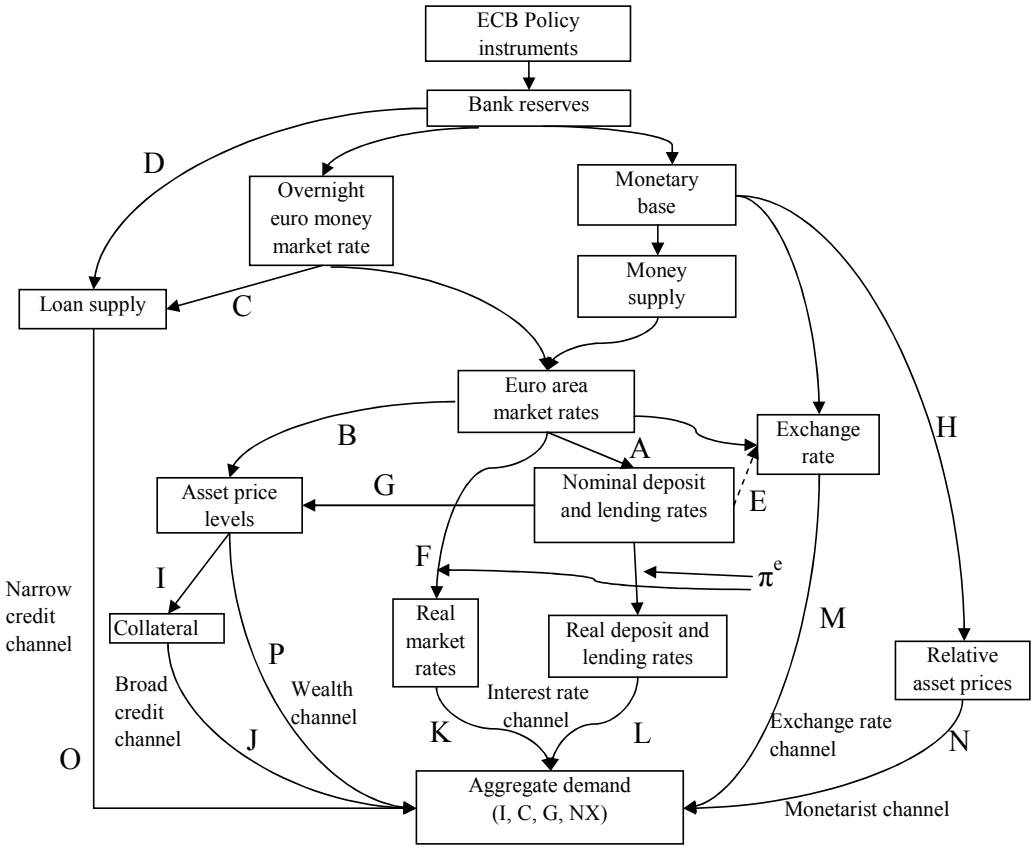
[33] In the French model used by van Els and others (2001), the substitution effect was imposed in the consumption equation, which could overestimate the real impact of monetary policy.

C. Transmission of Monetary Policy in the Context of France's Idiosyncrasies

40. **This section identifies structural and institutional features of the French economy and financial sector that could impact on the transmission mechanism of monetary policy and cause deviations from its functioning in the rest of the euro-area.** In doing so, it pays particular attention to the financial context that French households face, as well as to factors that are within the authorities' control. For a detailed description of these idiosyncrasies, see Appendices I and II.

41. **To determine the potential relevance of French idiosyncrasies for the transmission mechanism of monetary policy, we use the schematic presentation of Kuttner and Mosser** (2002), modified to reflect the situation in the euro-area/French context (Figure 1). The main modification consists of a separation of intermediated interest rates (deposit and lending rates) from nonintermediated ones. This seems necessary to identify the impact of administered interest rates and some other idiosyncrasies that tend to affect intermediated rates only.

Figure 1. Overview of the Transmission Mechanism of Monetary Policy in the Euro-Area Context



Source: Kuttner and Mosser (2002), with IMF staff modifications.

42. **Government interventions in the financial system likely affect the transmission mechanism of monetary policy in many different ways**. However, such interventions are not the only idiosyncrasies that are likely to be relevant in determining the eventual impact of a monetary policy shock. The arrows labeled with capital letters in Figure 1 mark the channels where we think French idiosyncrasies could affect the transmission of monetary policy. Table 4 lists the specific idiosyncrasies we consider relevant for each of these channels. In our view, the most prominent cases of government interventions interfering with the transmission mechanism (the core effects of which are marked with bold X's in Table 4) are (i) the fact that administered interest rates, the *ni-ni*, and the usury legislation, to a significant extent and at least in the short run, interrupt the transmission from euro-area market rates to nominal deposit and lending rates (Channel A in Figure 1); and (ii) the impact of a wide range of government interventions on the interest rate sensitivity of consumption and investment (Channel L and, to a lesser extent, Channel K). This suspected government impact appears to be in line with the findings in the literature discussed in Section B.

Table 4. Overview of Potential Relevance of a Range of Idiosyncrasies for the Different (Partial) Channels of Transmission

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P
Administered savings schemes	**X**	X	X		X		X	X				**X**		X		
Ni-ni	X		X													
Tax treatment of savings products		X					X	X			X	**X**		X		X
Usury rate	X						X					X				
Centralization of deposits		X	X	X			X	X		X	X	X		X	X	
Restrictions on the use of deposits		X					X	X		X		X		X	X	
Differential tax treatment of investments		X				X	X	X			X	X		X		X
Balance sheet structure of the banking system			X	X					X			X		X		
Competitive situation in the banking syster	X		X	X						X		X		X	X	
Role of remaining public financial institutic	X	X	X	X		X	X	X		X	X	X		X	X	
Housing and mortgage market features		X					X	X	X	X		**X**		X		X
Level of equity in households' portfolios									X					X		X
Low importance of non-euro-area trade													X	X		
Structure of GDP										X	X	X	X	X	X	X
Structure of production											X	X	X	X	X	
Low leverage of households		X					X		X	X	X	X		X	X	

Source: IMF staff.

43. **The impact of euro-area market interest rates on nominal lending and deposit rates in France** (Channel A) is affected by anything that directly influences the pricing of bank loans and deposits, notably the administered savings schemes, the *ni-ni*[34] and the usury legislation, as well as by factors that affect the pricing power of financial institutions, such as the competitive situation in the financial system and the presence of publicly owned or other

[34] For an explanation of the *ni-ni*, see second subheading in section A of Appendix 1.

institutions that do not behave as profit-maximizers. In this context, it is worth recalling that, until recently, France's cooperative banks were seen as being insufficiently profit-oriented.

44. **The way euro area interest rates affect French asset prices** (Channel B) depends on the ability of economic agents, including financial institutions, to quickly adjust their asset portfolios in function of changing market conditions. Hence, idiosyncrasies that tend to lead to asset portfolios being insensitive to market conditions (e.g., centralization of deposits and presence of public financial institutions in the market), to high transaction costs or long delays in executing transactions in asset markets (e.g., some features of the housing and mortgage markets) or, more generally, to rigidity in asset portfolios (such as certain administered savings schemes, the tax advantages accorded to life insurance products, tax advantages steering investments towards long-term holdings of certain types of assets, and earmarking of assets) will slow down the adjustment of asset prices.

45. **The way banks' loan supply, in quantitative terms, reacts directly to changes in bank reserves and money market conditions** (Channels C and D), depends on the structural characteristics of the financial system, the structure of banks' balance sheets and the relevance of money market rates for banks' cost of funding. The less competitive and market oriented a system, and the less it is affected by money market rates, the less responsive it is likely to be. As a result, the presence of public financial institutions, the centralization of deposits, and government interventions affecting their cost of funding (such as the *ni-ni* and the administered interest rates), are likely to diminish its responsiveness.

46. **When domestic deposit and lending rates do not move in line with market and policy interest rates, monetary policy's influence over the exchange rate could be affected** (Channel E). For example, a decline in market rates that is not accompanied by a decline in deposit rates will not give depositors much incentive to reallocate their deposits towards foreign exchange. However, since the advent of the euro, the scope for this effect has become limited.

47. Since French financial markets are closely integrated with those of the rest of the euro area, **market interest rates in France should adjust fully and without significant delay to euro market interest rates** (Channel F). However, divergences are still conceivable in smaller market segments dominated by domestic players, or where market distortions exist. For example, the CDC's size and preference to invest in specific kinds of French securities has reportedly led to anomalies in the pricing of those securities. It is also possible that tax discrimination in favor of a specific type of securities leads to deviations from market rates.

48. **If bank lending and deposit rates deviate from market rates, asset pricing will be affected** (Channel G). However, any idiosyncrasies that influence the substitutability between bank deposits and other assets or economic agents' ability to finance the purchase of assets with bank loans, is likely to also affect the relevance of this channel. The same idiosyncrasies that affect Channel B are likely to play here, with the addition of the usury legislation.

49. Under the first leg of the monetarist channel (Channel H), **monetary operations modify the stock of (base) money relative to the stocks of other assets and hence the marginal utility of money compared to that of other assets** (Meltzer, 1995). This triggers portfolio adjustments as economic agents seek to re-establish equality of marginal utilities, which in turn generates relative asset price changes, including changes in interest rates. While the focus is somewhat different, the idiosyncrasies at work are largely the same as for Channels B and G.

50. **In the broad credit channel, changes in asset values alter the amount of available collateral** (Channel I)**, which in turn alters economic agents' ability to borrow** (Channel J). Idiosyncrasies that could affect the functioning of this channel are mainly related to the balance sheet structure of economic agents, including financial institutions. These include: the structure of households' portfolios; the rate of homeownership; the importance of assets that are difficult to use as collateral (e.g., life insurance policies); and the degree of leverage in economic agents' balance sheets. With aggregate household leverage low in France, asset price variations do not have a disproportionate impact on economic agents' free assets. Idiosyncrasies affecting the second leg of the channel are those that determine the relevance of available collateral in lending decisions and in the loan supply. These include housing and mortgage market characteristics (e.g., the unavailability of cash-out home equity loans), structural and behaviorial features of the banking system (e.g., level of competition, lending policies, and [loan] product innovation), the role of public financial institutions, the centralization of deposits, and the low leverage of households.

51. **In the final leg(s) of the interest rate channel** (Channels K and L)**, changes in the real rate of interest and real user cost of capital affect consumption and investment decisions**. Idiosyncrasies that "lock in" interest rates and savings and investment decisions—as some administered savings schemes, life insurance policies, and special tax regimes do—will reduce the functioning of this channel. The interest rate sensitivity of savings and investment decisions also depends on the importance of interest rates relative to the other costs of financial transactions (e.g., fixed fees charged by banks, notary fees, or taxes imposed on financial transactions), hence the importance of factors such as housing and mortgage market features and the competitive situation in the banking system. This sensitivity further depends on the balance sheet structure of economic agents, which determines the relative importance of income and substitution effects and, in the case of financial institutions, the (marginal) profitability of lending. Finally, factors that reduce the flexibility of the loan supply (to respond to interest rate-driven changes in demand)—such as the centralization of deposits, earmarking of noncentralized deposits, and the balance sheet structure of the financial system—may impede the functioning of the interest rate channel.

52. The way **changes in the exchange rate affect aggregate demand** (Channel M) depends in large part on the openness of the economy. In the case of euro-area members, what matters in the first round is the openness towards the non-euro-area world. France's relatively low openness can be expected to make this channel less important than in the rest of the euro-area.

53. **Under the second leg of the monetarist channel** (Channel N)**, changes in relative prices on the asset markets spill over to the output markets**, because the price of existing assets has changed relative to their production cost and through the impact of unanticipated inflation on output (Meltzer, 1995). As a result, any factor affecting the flexibility with which asset portfolios can be reallocated across financial and real asset markets and any factor affecting the ability of output to respond to these portfolio reallocations (including the structure and openness of the economy), will have an impact on this transmission channel.

54. **The impact of the supply (in quantitative terms) of bank loans on aggregate demand** (Channel O)**, will vary with the degree to which economic agents are dependent on bank financing and with the degree to which credit provision is supply-driven.** The balance sheet structure of nonbank economic agents, the degree of disintermediation, and some structural features of the financial system, such as competition and constraints that steer the loan supply in a given direction (for example in the use of PEL resources only for mortgage-related operations), are potentially germane for this channel.

55. **The relevance of wealth for consumption** (Channel P) **depends on the correct perception of wealth, on the importance of wealth relative to income, on the relative and absolute importance of different kinds of assets in households' portfolios, and on the degree to which wealth can easily be converted into consumption**, through asset sales or borrowing. As a result, potentially relevant idiosyncrasies for this channel are those which steer investments towards products of which the value is less easily observable (e.g., tax advantages favoring life insurance products) and housing and mortgage market features.

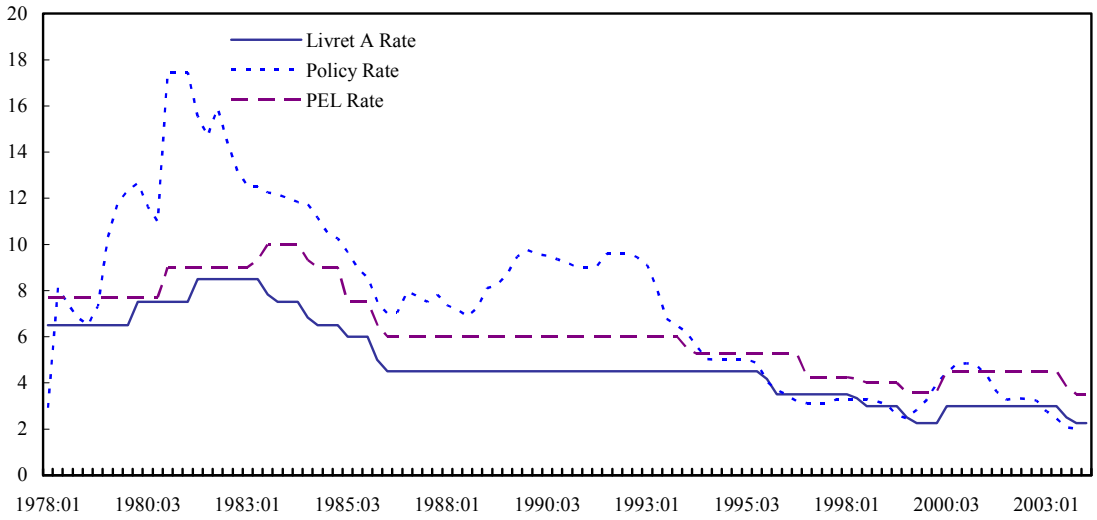
56. Across channels, the eventual impact of monetary policy-induced changes in consumption, investment and net exports on aggregate demand will depend on the relative importance of these items in aggregate demand. In other words, **the structure of GDP will affect the functioning of all channels**. On the supply side, the structure of an economy's production is also relevant in determining the aggregate impact of a number of channels, because of differences in sensitivity between sectors. For example, industry is typically more capital intensive than services and hence more sensitive to changes in interest rates.

D. Econometric Analysis of Interest Rate Transmission and Consumption

57. **The above analysis and the review of the literature point to interest rate transmission and its effect on aggregate demand, in particular consumption, as two areas where administratively set interest rates play a large role**. Furthermore, the two most important administratively set interest rates have in the past deviated significantly and during sustained periods from the policy rate (Figure 2). In this section, we find that market credit rates are sensitive to administered rates, as the latter influence the cost of banks' resources. Half of the opening of the spread between the consumption credit rate and the policy rate between 2000 Q3 and 2003 Q3 could be explained by the lack of adjustment of the *Livret A* rate*,* a key administered savings scheme, to the easing of monetary policy rates. In line with other studies, we find consumption to be more sensitive to income effects than to

substitution effects. A static computation suggests that over the last three years, up to 3¼ percentage points of potential consumption growth appears to have been forgone because of the slow adjustment of consumption credit rates.

Figure 2. Policy Rate, *Livret A* Rate, and PEL Rate
(In percent)



Sources: *Banque de France* ; IMF, IFS and staff calculations.

58. **As always, a number of caveats apply to the present exercise.** First, the data—kindly provided by the *Banque de France*—only go back to the beginning of the 1990s, and their frequency is quarterly. Hence, the econometric analysis is constrained by a relatively low number of observations. Second, no weighted average series of deposit rates was available, which imposed use of the policy rate as a proxy in the analysis of consumption.[35] Finally, the French economy and financial system have changed tremendously over our sample period, as a result of liberalization and privatization, multiple reforms of administered savings schemes and other government interventions, a structural reduction in inflation, and the advent of EMU. These structural changes inevitably create an additional degree of uncertainty regarding the validity of our results and their relevance in the present and future contexts.

[35] All variables used in the econometric analyses are described in Appendix 3. All variables are found to be integrated of order 1, and the unit root tests are reported in Appendix 4.

Interest rate transmission from policy rate to retail rates

Short-term credit interest rates

59. **Most of the short-term bank credit rates in the dataset are sensitive to the spread between the policy rate and the main administered interest rate, likely reflecting the impact of the administered savings schemes on the cost of banks' resources.** To evaluate the size of this impact and more generally the nature of interest rate transmission, we proceeded in three steps:

- First, we test the impact of the administered interest rates (through the *Livret A* rate) on six credit market rates [36], using a long-term relationship with the following specification:

$$r_{credit} = \alpha\, r_{policy} + \beta \left(r_{Livret\ A} - r_{policy} \right)$$

  We use the spread between the policy rate and the *Livret A* rate, rather than levels of both, to minimize multicolinearity. We find that the *Livret A* rate plays a role for all rates except the rate on small loans to consumers (Appendix V). Banks adjust their market rates to any change in the policy rate, but this adjustment is mitigated when the *Livret A* rate does not adjust in parallel. The effect of administered rates on the cost of banks' resources is twofold. On the one hand, administered rates directly determine the cost of those administered deposits that remain within the banks, such as most of the deposits collected in *CODEVI* accounts. On the other hand, nonadministered deposits have to compete with the administered ones and this limits banks' freedom in setting nonadministered deposit rates.

- Second, following Mojon (2001), we estimate in one step the full dynamics of the interest rate transmission, using error-correction models. For consumption credit rates, we find the long-term coefficient to be less than one in some cases and greater than one in others. For rates on credit to enterprises, it is in all cases closer to 2 than to 1. While those results should be taken with caution, they could signal different degrees of competition in the consumer and business (in particular SMEs) segments. The estimated equations are detailed in Appendix VI.

- Third, using these estimates, we simulate the reaction of the six short-term credit rates in our dataset to a 100 basis point hike in the policy rate, with different assumptions regarding the subsequent adjustment of the *Livret A* rate: (1) no change; (2) adjustment by 50 basis points with a 6-month delay, mimicking the post-

[36] The *Banque de France* monitors six rates: for households, the rates for loans below €1,524, on overdrafts, and for loans above €1,524; for enterprises, the discount rate, the rate on overdrafts and the one for other short-term loans. Details are provided in Appendix 3.

August 2003 system; (3) full adjustment with a six-month delay ; and (4) full and instantaneous adjustment.

60. **The simulations confirm that lack of full and instantaneous adjustment of the *Livret A* rate hampers monetary transmission** (Tables 5a and 5b). While the effect on small consumer loans is limited, for all other credit rates, full and immediate adjustment leads to a stronger interest rate response than under the current post-August 2003 system. For consumer credits, interest rates react by an additional 26 to 44 basis points after one year and 31 to 79 basis points after two years. For credits to enterprises, the responsiveness is much higher with ranges from 75 to 121 basis points after one year and 89 to 129 basis points after two years.

61. **The absence of full adjustment of the *Livret A* rate to the policy rate explains more than half of the increase in the spread between the consumption credit rate and the policy rate over the last two years.**[37] The spreads between the aggregate consumption credit rate and the policy rate, and between the *Livret A* rate and the policy rate have widened over the last three years (Figures 3 and 4). Using the above econometric analysis and simulation, we find that the rise in the spread between the *Livret A* rate and the policy rate explains 143 basis points of the 236 basis point increase in the spread between the consumption rate and the policy rate between 2000Q3 and 2003Q3 (Table 6). A large part of the widening of the spread is, however, due to other factors.

[37] The aggregate consumption credit rate is the simple average of the three rates compiled by the *Banque de France* (namely, on overdrafts, nonoverdraft loans less than €1,524 and nonoverdraft loans greater than €1,524). A weighted average would have been preferable but could not be calculated in the absence of information on the stocks of loans per category.

Table 5a. France: Impact on Short-Term Consumer Credit Interest Rates of Shocks to the Policy Rate

(In percentage points)

Rate for Consumer Loans Below € 1,524	100 Basis Points Shock on the Policy Rate			
	No Adjustment on *Livret A*	50 bp Adjustment with 6 Months Delay	100 bp Adjustment with 6 Months Delay	100 bp Adjustment Instantaneously
Instantaneous	0.00	0.00	0.00	0.00
After 3 months	0.65	0.65	0.65	0.65
After 6 months	0.22	0.22	0.22	0.62
After 1 year	0.53	0.73	0.93	0.79
After 2 years	0.63	0.75	0.86	0.78
After 5 years	0.73	0.73	0.73	0.73
Long Term	0.73	0.73	0.73	0.73

Overdraft Rate on Consumer Accounts	100 Basis Points Shock on the Policy Rate			
	No Adjustment on *Livret A*	50 bp Adjustment with 6 Months Delay	100 bp Adjustment with 6 Months Delay	100 bp Adjustment Instantaneously
Instantaneous	0.58	0.58	0.58	0.58
After 3 months	0.75	0.75	0.75	0.75
After 6 months	0.40	0.40	0.40	0.82
After 1 year	0.56	0.78	0.99	1.22
After 2 years	0.57	0.95	1.33	1.26
After 5 years	0.54	0.81	1.08	1.05
Long Term	0.54	0.81	1.08	1.08

Rate for Consumer Loans Above € 1,524	100 Basis Points Shock on the Policy Rate			
	No Adjustment on *Livret A*	50 bp Adjustment with 6 Months Delay	100 bp Adjustment with 6 Months Delay	100 bp Adjustment Instantaneously
Instantaneous	0.00	0.00	0.00	0.00
After 3 months	0.91	0.91	0.91	1.34
After 6 months	0.73	0.73	0.73	1.06
After 1 year	0.72	0.88	1.05	1.04
After 2 years	0.76	1.24	1.72	2.03
After 5 years	0.76	1.47	2.21	2.23
Long Term	0.76	1.49	2.23	2.23

Source: IMF staff calculations.

Table 5b. France: Impact on Short-Term Enterprise Credit Interest Rate of Shocks to the Policy Rate

(In percentage points)

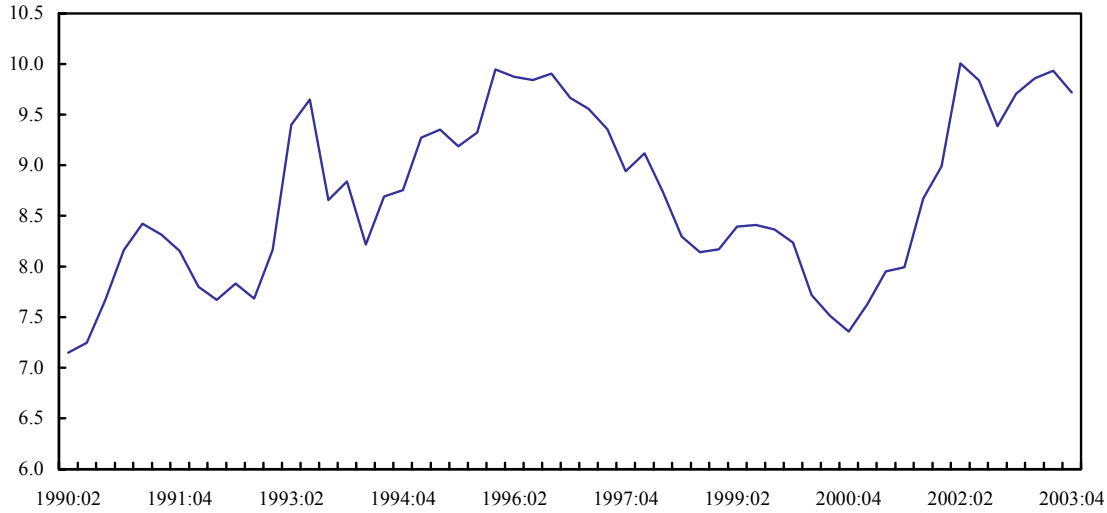
Discount Rate for Enterprises	100 Basis Points Shock on the Policy Rate			
	No Adjustment on *Livret A*	50 bp Adjustment with 6 Months Delay	100 bp Adjustment with 6 Months Delay	100 bp Adjustment Instantaneously
Instantaneous	0.63	0.63	0.63	0.63
After 3 months	1.02	1.02	1.02	1.09
After 6 months	0.83	0.83	0.83	0.77
After 1 year	0.96	0.92	0.89	2.13
After 2 years	0.63	1.49	2.35	2.78
After 5 years	0.56	1.48	2.39	2.39
Long Term	0.55	1.49	2.43	2.43

Overdraft Rate on Company Accounts	100 Basis Points Shock on the Policy Rate			
	No Adjustment on *Livret A*	50 bp Adjustment with 6 Months Delay	100 bp Adjustment with 6 Months Delay	100 bp Adjustment Instantaneously
Instantaneous	0.71	0.71	0.71	0.71
After 3 months	1.02	1.02	1.02	0.74
After 6 months	1.01	1.01	1.01	0.42
After 1 year	0.85	0.56	0.26	1.46
After 2 years	0.60	1.25	1.90	2.52
After 5 years	0.70	1.35	2.01	2.03
Long Term	0.67	1.41	2.14	2.14

Rate for Other Short-Term Loans to Enterprises	100 Basis Points Shock on the Policy Rate			
	No Adjustment on *Livret A*	50 bp Adjustment with 6 Months Delay	100 bp Adjustment with 6 Months Delay	100 bp Adjustment Instantaneously
Instantaneous	0.78	0.78	0.78	0.78
After 3 months	0.98	0.98	0.98	0.69
After 6 months	1.05	1.05	1.05	0.68
After 1 year	1.02	0.84	0.66	1.59
After 2 years	0.74	1.37	1.99	2.26
After 5 years	0.78	1.38	1.97	2.00
Long Term	0.78	1.38	1.99	1.99

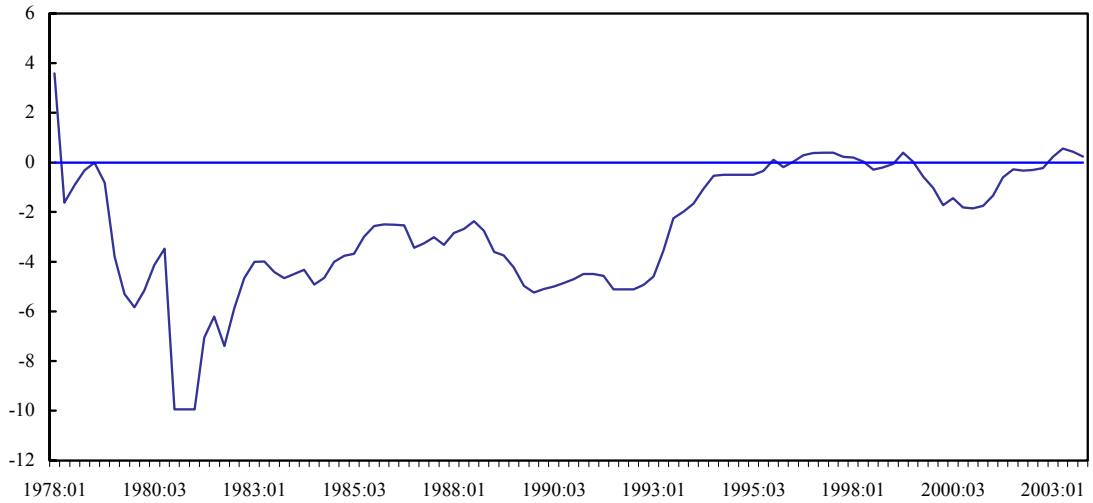
Source: IMF staff calculations.

Figure 3. France: Spread Between Consumption Credit Rate and Policy Rate
(In percent)



Sources: *Banque de France* ; IMF, IFS and staff calculations.

Figure 4. France: Spread Between *Livret A* and Policy Rate
(In percent)



Sources: *Banque de France* ; IMF, IFS; and IMF staff calculations.

Table 6. Contributions of Policy Rate and Spread Between *Livret A* Rate and Policy Rate to the Spread Between Consumption Rate and Policy Rate

(In basis points)

	$r_{credit} - r_{policy}$	$(\alpha - 1)r_{policy}$	$\beta(r_{Livret\ A} - r_{policy})$
Evolution between 2000Q3 and 2003Q3	236	-265	214
Contribution		-92	143

Source: IMF staff calculations.

Medium- and Long-Term Credit Interest Rates

62. **None of the long-term credit rates appears sensitive to administered saving rates.** The full dynamics of the long-term rates is provided in Appendix VI. Tests within long-term relationships show that mortgage loans are not influenced by the rate on the mortgage-related savings accounts (PEL)[38], nor is the rate for medium-and long-term loans to enterprises influenced by the *Livret A* rate. In contrast, they consistently exhibit a high degree of correlation with the long-term market rate, proxied by the 10-year government bond rate (Appendix VII). The PEL rate only has a marginal impact on the short-term dynamics of mortgage rates.

63. **Variable mortgage rates are found to be correlated with long-term market rates, with a speed of adjustment that is marginally higher than that for fixed mortgage rates**.[39] However, since changes in variable rates affect the stocks of outstanding loans, whereas changes in fixed rates only affect new flows, even with the same or similar adjustment dynamics, one would expect the former to be of higher relevance to the transmission of monetary policy than the latter. But in the case of France, the majority of mortgage loans are contracted at fixed rates, rendering the fixed-rate dynamics relatively more important and the economy overall relatively less sensitive to changes in monetary policy. Since 1998, the difference between variable and fixed mortgage rates has consistently been less than 100 basis points, which could potentially signal that the market does not properly price variable mortgage rates (Cherbonnier and Payet (2004)).

[38] The result on mortgage loans is to be taken with some caution. First, it is difficult to compute a relevant effective cost of resources for banks that draw on PEL deposits to finance mortgage loans. The PEL rate we used is the deposit rate for new contracts, but changes in this rate do not affect older contracts. An effective rate, aggregating the cost of all PEL deposits, would be more relevant, but does not exist. Second, a structural break occurred in 1996, when the authorities introduced an obligation for banks to invest PEL deposits in mortgages or similar assets.

[39] We found that variable mortgage rates are better explained by long-term market rates than by short-term ones, and therefore proceeded with the former in our analysis.

Consumption

64. **Household consumption does not appear to be significantly sensitive to the level of the policy interest rate but the spread between the latter and the consumption credit rate matters.** To assess the implications of the low response from the monetary policy rate to interest rates on consumption credit, we estimated a long-term consumption equation, using quarterly data from 1990 to 2003 and real disposable income, the real policy interest rate and the spread between the consumption credit rate and policy rate as explanatory variables. In the absence of a good data series on aggregate deposit rates, we use the policy rate to ensure that the income effect generated by interest rate changes is captured. The consumption credit rate constructed as indicated above is used to capture the substitution effect. The consumer price index is used to convert the nominal interest rate and disposable income data to real series. Our preferred estimation is the following (Equation (1) in Table 7):[40]

$$LogC = \underset{(2.66)}{1.02} + \underset{(31.6)}{0.91}\,Log\left(\text{Re}\,al\ Disposable\ Income\right) - \underset{(-1.55)}{0.33}\,r_{Policy} - \underset{(-3.72)}{1.3}\left(r_{ConsumptionCredit} - r_{policy}\right)$$

$$Estimation\ \ Period : 1991:01 - 2003:02$$

The estimation results indicate that the level of the policy rate is not significant[41], but that interest rates have significance through the spread. In the case where all rates move simultaneously, consumption is not affected, which could be interpreted as income and substitution effects offsetting each other. In the opposite extreme case in which the consumption credit rate does not adjust at all to a change in the monetary policy rate, the impact of a relaxation of monetary policy is a dampening of consumption. In this case, the income effect is negative, as households earn less from their assets, but borrowing remains equally expensive, which prevents the substitution effect from playing in full. In reality, the transmission from the policy rate to the consumption credit rate is not perfect and immediate.

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[40] The lack of a consistent series of consumption credit rates going back before 1990 restricts the estimation period. On the other hand, in view of the significant liberalization that occurred in the French financial sector during the second half of the 1980s, adding data from the 1980s and before to the data sample might obscure the current impact of the financial sector on household behavior. Nonetheless, a series of regressions was also performed going back further in the past (Equations 7 and 8 in Table 7, with Equation 9 provided for comparison purposes). They tend to show that, with the 1980s data added, real interest rates loose their significance when combined with inflation in a consumption equation, while inflation itself becomes highly significant. During the 1980s, in a context of sticky nominal interest rates, most of the volatility in real interest rates was caused by variations in inflation. Higher inflation reduced real interest rates, but also eroded households' real income and financial wealth, leading to higher savings efforts. This, combined with the impact of the financial liberalization of the 1980s, explains why many long-term studies on French consumption that use inflation and the real interest rate as explanatory variables, only find the latter affecting consumption from the mid-1980s onwards (Bonnet and Dubois (1995), Allard and others (2002)).

[41] The coefficient for real disposable income (which represents the income elasticity of consumption and should in the long run trend towards one) was found to be significantly different from one. Potential explanations are low precision of the estimates due to the limited number of observations and the relatively short time period they cover, the fact that the sample period (1990–2003) does not correspond to an integer number of full cycles, and potential trend changes in the savings ratio during the sample period.

This suggests that in practice, the overall impact of a relaxation of monetary policy on consumption in France tends to be slightly negative, as the substitution effect does not fully compensate the income effect.[42]

65. **The absence of full interest rate transmission during the recent monetary loosening likely affected the strength of consumption.** The widening of the spread between the consumption credit rate and the policy rate that occurred during 2000-03 (Figure 3) prevented households from fully taking advantage of the decline in policy rates. The long-term estimated equation even suggests that because banks' credit rates did not adjust fully to the monetary loosening, about 3¼ percentage points of potential consumption growth could have been forgone over the last two to three years.

66. **The *Livret A* rate does not appear to directly influence consumption.** When added to the regression, the coefficient of its spread with the policy rate is not significant (Equations (2) and (5) in Table 7). However, it is worth noting that the same spread comes up significantly positive when the equation is estimated over the 1980–2003 sample period (Equation (6) in Table 7). During the 1980s, the *Livret A* rate was significantly below the policy rate and often negative in real terms. It was also somewhat less variable than the policy rate. As a result, a widening spread can reflect an increase in inflation or more generally a deteriorating macroeconomic context requiring a tightening of monetary policy, which negatively affects households' willingness to consume. In addition, as discussed before, a widening spread during the 1980s was often associated with a decline in the real value of financial wealth, which tended to trigger a "make-up" increase in the savings rate.

E. Concluding Remarks and Options for Reform

67. The econometric evidence presented in this study suggests that the existence of administered rates exerts a significant influence on some bank credit rates, slowing down the transmission and weighing on the eventual impact of changes in monetary policy. **These results argue for an instantaneous adjustment of the *Livret A* rate and other administered rates to changes in the ECB rates.** The current formula, introduced in August 2003, which adjusts the *Livret A* rate to policy rate changes every six months, and potentially only by half, is helpful but still hampers monetary policy transmission.

[42] This result is in line with a cross-country OECD paper by Serres and Pelgrin (2003), which shows that, over 1970–2000, France, Italy, Spain, and Belgium exhibit a negative correlation between the interest rate and the savings rate, while in all other major OECD countries, the real interest rate has a positive but insignificant impact on the savings rate.

Table 7. France: Estimation of the Long-Term Consumption Equation Using Phillips-Loretan Nonlinear Estimator

Log (Consumption) = Cointegration Relation + Sum (Lagged Variables) + Sum (Forward Variables)
+ ρ (Consumption (-1) – Constant – Cointegration Relation (-1))

	Equation 1	Equation 2	Equation 3	Equation 4	Equation 5	Equation 6	Equation 7	Equation 8	Equation 9
Real disposable income	0.91 (31.6)*	0.93 (33.6)*	0.94 (25.72)*	0.87 (10.33)*	0.98 (28.0)*	0.82 (19.9)*	0.80 (14.9)*	0.77 (19.2)*	0.90 (12.1)*
Real policy rate 1/	-0.33 (-1.55)	-0.19 (-0.58)	0.19 (1.20)	0.66 (1.54)	0.66 (1.51)	0.99 (6.18)*	0.18 (0.79)		
Spread between the consumption credit rate and the policy rate 1/	-1.3 (-3.72)*	-0.86 (-2.88)*							
Spread between the *Livret A* rate and the policy rate 1/		-0.098 (-0.39)			0.35 (1.02)	0.83 (3.90)*			
Inflation 1/							-0.57 (-3.30)*	-0.7 (-5.43)*	-0.57 (-0.68)
Constant	1.02 (2.66)*	0.83 (2.33)*	0.56 (1.25)	1.42 (1.39)	0.07 (0.17)	1.98 (3.94)*	2.29 (3.45)*	2.61 (5.27)*	1.08 (1.18)
ρ	0.43 (3.16)*	0.40 (2.92)*	0.59 (5.26)*	0.90 (18.03)*	0.53 (4.41)*	0.78 (11.3)*	0.77 (11.9)*	0.79 (13.3)*	0.78 (6.04)*
Period of estimation	1991:01-2003:02	1991:01-2003:02	1990:04-2003:01	1980:02- 2003:01	1991:01- 2003:02	1980:02- 2003:01	1980:02- 2003:01	1980:02- 2003:01	1990:04-2003:01
Degrees of freedom	33	28	34	74	29	59	66	74	32
Standard error of dependent variable	0.067	0.067	0.066	0.12	0.067	0.12	0.12	0.12	0.066
Standard error of estimate	0.0048	0.0044	0.0048	0.0057	0.0048	0.0058	0.0055	0.0055	0.0051
DW	2.23	2.23	2.23	2.18	2.19	2.41	2.33	2.39	2.34

1/ The coefficients on this explanatory variable should be read as the percentage point change in consumption resulting from a one percentage point increase in the explanatory variable.
* = Significant at 5 percent level.

Source: IMF staff calculations.

68. Nonetheless, slow and partial adjustment of administered rates explains only part of the sluggishness of monetary transmission. From this perspective, **consideration should be given to reassessing a range of other government interventions and policies**. In particular, the requirement to provide checks free of charge as a quid pro quo for zero interest-bearing checking accounts (*ni-ni* policy), and the inertia in setting both deposit and credit PEL rates could bias some prices charged by banks. Furthermore, the PEL's locking-in of interest rates on future loans and savings blunts the impact of monetary policy. Consideration could therefore be given to the elimination of the *ni-ni* rule, to a more rapid—preferably automatic—adjustment of the PEL rates to changes in the monetary environment and in long-term market rates, and to eliminating or reducing absolute interest rate commitments in new PEL contracts, for example by defining commitments relative to market rates at the time a loan is taken up. The usury legislation should also be reassessed, especially since in its current form, it could interfere with the transmission mechanism in case of rapid changes in policy interest rates. A better functioning of the mortgage market should be aimed at, potentially with the introduction of home equity loans and reforms of the system of mortgage liens. Finally, a strong competition policy is needed to safeguard the functioning of market forces in the financial sector.

Idiosyncrasies in the French Financial Landscape

1. In this Appendix, we discuss the idiosyncrasies of the French financial system and economy that could affect the transmission mechanism of monetary policy. A first section focuses on public intervention in the financial sector. In doing so, we follow the structure of the sector's balance sheet. Hence, we will first discuss the main government interventions on the liability (deposit) side of the system's balance sheet (i.e., administered savings schemes, the tax treatment of savings products, the *ni-ni*, and the usury legislation), and subsequently those on the asset side (i.e., centralization of deposits, restrictions on the use of some administered deposits, and the tax treatment of investments). In Section B, we shift our attention to structural issues in the French financial sector, namely the structure of the banking system's balance sheet, the competitive situation within the system and the role of the remaining public financial institutions. Section C explores some particularities of French asset markets, in particular the housing and equity markets. Finally, Section D assesses the relevance of some structural features of the French economy.

A. Public Intervention in the Financial Sector

2. One of the most striking features of the French financial system is the extent to which the government still intervenes in the collection, management and allocation of the country's savings. On the liability side of the financial system, the most important interventions are administered savings schemes, differential tax treatment of savings products, the *ni-ni* requirement,[43] and the usury legislation. On the asset side, government intervention is less pervasive, but still significant. It consists of the centralization of deposits to be invested by a state-owned entity, restrictions on the use of funds collected through some administered savings schemes, and differential tax treatment of investments. The continued presence of two sizable government-owned financial institutions (*La Poste* and the *Caisse des Dépôts et Consignations*) also gives the government a foothold in financial intermediation.

Administered savings

3. Administered savings schemes are savings products designed wholly or in part by the government, which determines (a number of) its features and, in most cases, its (minimum) remuneration. These government-designed features define the administered savings products along seven main dimensions: (i) eligibility requirements; (ii) determination of the remuneration; (iii) tax treatment; (iv) quantitative deposit limits; (v) withdrawal rules; (vi) distribution channels; and (vii) the destination and/or purpose of the collected funds. An overview of all administrative savings products, defined along these seven dimensions, is provided in Appendix II.

[43] The *ni-ni* requirement, based on the French term for "neither … nor …" refers to the double prescription that banks can neither remunerate demand deposits, nor charge for checkbooks.

4. Administered savings schemes are very popular. They encompass half of all resident bank deposits in France, for an amount in excess of a third of GDP (Table 1). The most popular schemes are—in volume terms—the housing savings scheme (*Plan d'Épargne-Logement* or PEL) and—in number—the *Livret A*. The *Livret A* rate serves in many ways as the "base rate" for the administered savings products: the *Codevi* and *livret bleu* are remunerated at the same level, the floor on the remuneration of the *livret jeune* is the *Livret A* rate, and other rates are generally adjusted in line with changes in the *Livret A* rate.

Table 1. Composition of Resident Client Deposits at Monetary Financial Institutions and La Poste, December 2003

Depository Category	Amount (In billions of euros)	Percent of Total Deposits	Percent of GDP
Administered deposits	528.7	49.3	34.0
Livrets A	112.0	10.4	7.2
Livrets bleu	15.5	1.4	1.0
Codevi	43.2	4.0	2.8
Livrets jeunes	5.7	0.5	0.4
Livrets d'Epargne Populaire (LEP)	53.8	5.0	3.5
Comptes d'Epargne-Logement (CEL)	36.0	3.4	2.3
Plans d'Epargne-Logement (PEL)	216.5	20.2	13.9
Plans d'Epargne Populaire (PEP)	46.0	4.3	3.0
Of which: centralized deposits	217.0	20.2	14.0
Demand deposits	342.1	31.9	22.0
Other deposits	202.4	18.9	13.0
Total deposits	1,073.2	100.0	69.1

Source: *Banque de France* ; and IMF staff calculations.

5. Until recently, the *Livret A* rate was in practice set by the government.[44] As noted by Nasse and Noyer (2003), this politicization of changes in interest rates and especially the unpopularity of downward adjustments led to hysteresis in the administered interest rates. In July 2003, it was announced that henceforth, the rate of remuneration would be set automatically at the average of the inflation rate and the ECB's short-term interest rate, plus 25 basis points. Adjustments are planned to take place every six months, starting on August 1, 2004. The *Banque de France* has been charged with implementing this new

[44] Formally, it was a competence of the *Comité de la Réglementation Bancaire et Financière* (CRBF) from 1984 to 1998, when an advisory committee was set up to monitor interest rate developments and propose changes when needed to stay within a predefined band. However, final approval by the government was needed for any interest rate change under both arrangements, resulting in political considerations being one of the main drivers of interest rate changes.

arrangement, but is empowered to deviate from the formula under exceptional circumstances. In particular, the *Banque de France* is expected to keep the *Livret A* rate positive in real terms at all times.

6. The planned semi-annual semi-automatic adjustments in the rate of the *Livret A* will reduce the duration and magnitude of deviations from market rates, but not eliminate them. Under the new system, a lag of between 2–3 months and 8–9 months will remain before a change in the ECB's policy rates is reflected in the *Livret A* rate. The reasons are the 6-month intervals between rate adjustments and the fact that the new rate will be decided some time before the adjustment date, based on earlier observations. More importantly, inflation remains as an important variable in the formula, and may become the sole determinant of the *Livret A* rate when the ECB's policy rate becomes negative in real terms, potentially hampering the ECB's efforts to boost the economy in downturns. Under normal circumstances, the presence of inflation in the formula may lead to divergences between the *Livret A* rate and policy rates, which could be more significant the more backward-looking the chosen inflation indicator is.

7. The *Plan d'Epargne Logement* (PEL), the largest administered savings scheme in terms of volume (representing one fifth of total bank deposits), is a long-term savings scheme that offers tax advantages if maintained for at least four years, a potential interest rate subsidy, and the right to a mortgage loan at a predetermined rate (Appendix II). It tends to reduce and alter households' sensitivity to interest rates for several reasons. First, a PEL requires a depositor to save a contractually specified minimum amount every month, reducing the flexibility of depositors' savings behavior. Second, the deposit interest rate and the lending rate[45] are locked in for the duration of the plan at the time the PEL is set up, at the then going rate established by the government. As a result, for PEL holders, the interest rate at which they can save, or the rate at which they can take out a mortgage loan (be it of a restricted amount), does not alter with changes in policy and market interest rates. Furthermore, the risks of changes in interest rates become asymmetrical for households: in case of higher interest rates, they can maximize their borrowing under the plan. In case of falling interest rates, they can maximize their savings in a high-interest rate PEL, but forego the loan. For banks, the risks are asymmetrical in an opposite way. For them, the PEL consists of a set of long-term options they sell to their customers, of which they need to manage the (asymmetrical) risks. The December 2002 reform of the PEL, which eliminated the interest-rate subsidy for plans that do not result in a loan, has significantly reduced its attractiveness as a savings instrument, and hence new inflows in the scheme. However, the large existing stock of PEL deposits, and the long-term nature of the scheme, guarantee that the PEL will remain a very important item in banks' and households' balance sheets for years to come.

[45] The lending rate will still vary in function of the amounts saved under the plan and the time the plan has been maintained.

The *ni-ni* requirement

8. The *ni-ni* requirement, in the context of the French financial sector, refers to the provision that banks can neither remunerate demand deposits nor charge for providing checkbooks to their clients. In practice, competitive and client pressure has pushed banks to implement the rule by foregoing any charge for the use of checks.

9. As a result of the *ni-ni*, and the tendency of French households to nevertheless maintain high levels of demand deposits,[46] the majority of the nonadministered deposits in the banking system is excluded from any potential remuneration. Hence, the combination of the *ni-ni* and the administered savings schemes means that more than 80 percent of deposits is insensitive to changes in market and policy rates, at least in the short run.

10. The *ni-ni* affects the transmission mechanism of monetary policy in several ways. It renders economic agents' income and cash flows, as well as the cost of banks' resources, less sensitive to changes in interest rates. In addition, it alters the way monetary policy influences the resources available to the banking system. Normally, a tightening of monetary policy increases the opportunity cost of maintaining cash balances. As a result, the higher interest rates will induce economic agents to economize more on their cash balances and instead maintain higher bank deposits. Currency in circulation will decline, and base money will be transformed from currency in circulation into bank reserves (which, however, may have fallen initially as a result of the original monetary policy action). The *ni-ni* could interfere with this mechanism, because it ensures that economic agents do not face a trade-off between cash and demand deposits in terms of lost remuneration. As a result, the choice between the two is unaffected by changes in interest rates. Instead, economic agents face a trade-off between holding cash or demand deposits on the one hand, and holding less liquid bank deposits or money market instruments on the other. But if a change in interest rate encourages them to shift between demand deposits and other bank deposits, this does not affect the composition of base money. Currency in circulation, total bank deposits, and bank reserves all remain unchanged. However, if reserve requirements are different between different kinds of bank deposits, then there may be an effect on the banks' free reserves (as opposed to the monetary base). However, in the euro-area context, the risk of that happening is reduced by the fact that all deposits with a maturity up to two years are subject to a uniform reserve requirement.

Tax treatment of savings products

11. Savings products tend to be subject to different tax regimes. In general, the authorities have tried to put in place tax incentives that favor long-term savings instruments, such as life

[46] There is no obvious explanation for this tendency.

insurance policies[47], the PEL, the *Plan d'Epargne en Actions* (PEA), the *Plan d'Epargne Populaire* (PEP), the new *Plan d'Epargne-Retraite* (PERP), and others. All these products are characterized by the fact that they only qualify for favorable tax treatment if maintained for a long minimum period, usually between 4 and 8 years. The tax treatment of life insurance products has been especially favorable, leading French households to keep a significantly larger proportion of their wealth in such products than households in other countries (Table A1).

12. Life insurance policies can offer a guaranteed return, can be linked to the overall returns on the asset portfolio of the insurance company, or can be closely linked to the performance of specific assets in which the policyholder has chosen to invest (unit-linked policies), usually mutual funds investing in stocks, bonds or some combination of the two. Unit-linked policies represented 18 percent of life insurance policies in 2003. Overall, life insurance assets were invested mostly in fixed-income instruments (75 percent), with equity (22 percent) and real estate (3 percent) being of lesser importance. To benefit from favorable tax treatment, the life insurance policies typically have to be invested for over eight years.

13. The tax system's favorable treatment of life insurance products likely reduces the short-term impact of changes in the monetary policy stance on households' savings behavior and perception of wealth, because of the characteristics of life insurance policies. First, many life insurance contracts specify a minimum level of periodic savings that needs to be added to the policy. This, in combination with the practice among some insurers to charge all costs of a policy up front, has a tendency of locking in households' savings behavior by making changes prohibitively expensive. Households thus have a reduced ability to change their savings behavior in response to changing market conditions. However, to some extent, it is possible to borrow against a life insurance contract, which provides an option to change savings behavior while adhering to the contract. Second, the link between interest rates and asset prices on the one hand and returns on life insurance policies on the other, is less tight than it is for alternative investments such as bonds, stocks or bank deposits. The reasons are the existence of performance guarantees, the delay with which financial market developments are reflected in the performance of a life insurance policy, and the fact that insurance companies can use their hidden reserves to smoothen returns on insurance policies. On the other hand, unit-linked life insurance policies are becoming increasingly important, and many of these now simply consist of a portfolio of mutual funds, the value of which policyholders can follow on a daily basis. Finally, because of the required minimum 8-year maturity of life insurance products, holders of insurance policies have a reduced ability to adjust their portfolios in response to financial market developments, as they must stay within the contractually specified parameters of the life insurance contract. This could affect the speed and degree of adjustment of asset markets in France to changes in the monetary policy stance.

[47] Many forms of life insurance policies in France are in essence just long-term savings instruments, sold by insurance companies but incorporating little or no insurance elements.

14. The latter argument applies more generally to all tax schemes promoting long-term investments. By penalizing early withdrawals, these schemes tend to introduce an additional degree of rigidity in households portfolios. As a result, households have a lower ability to adjust in function of changing circumstances, e.g., a change in monetary policy. This may in turn affect asset price adjustments, wealth effects, and the speed with which changes in savings behavior occur.

The usury legislation

15. The French financial system is subject to a usury legislation that caps the interest rate financial institutions can charge on any loan to an individual or on an overdraft provided to a company, at four thirds of the average rate observed in the relevant loan category. For that purpose, the *Banque de France* monitors rates in the market, and calculates on a quarterly basis the average rate observed in each category. Application of the four thirds ratio then provides the usury rate for the next quarter. Hence, the system is backward-looking.

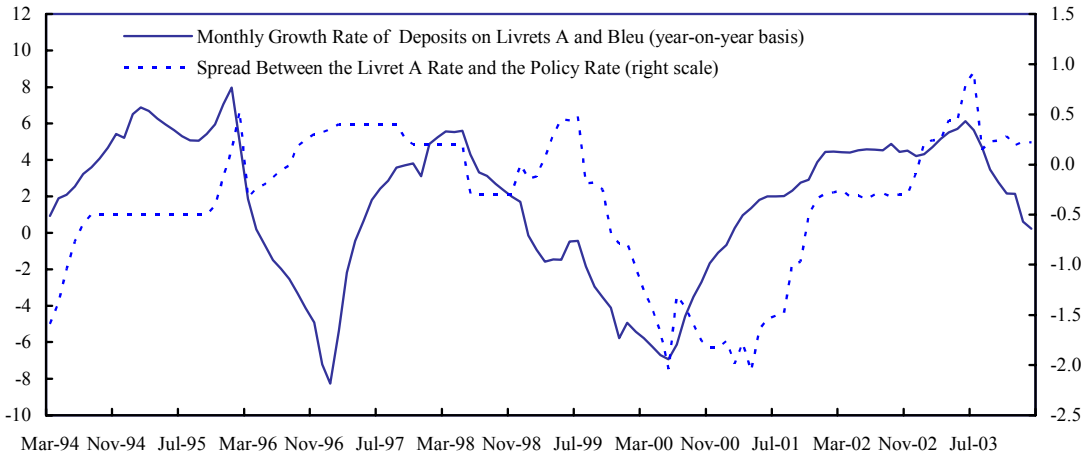
16. At only four thirds of observed rates, the usury rate is a binding constraint in many cases. Especially at very low levels of market interest rates, as observed now, it does not allow an adequate pricing of risk. Moreover, because of its backward-looking nature, it becomes more binding whenever monetary policy tightens, because it can take 6 months or more—especially in case of a rapid tightening of monetary policy—before a change in policy and market interest rates is fully reflected in the usury rate. As a result, the usury rate could either reinforce or blunt the impact of monetary policy, depending on the circumstances and on banks' behavior. If banks refuse to lend whenever they cannot price risk adequately, they should reduce their lending to more risky borrowers whenever a monetary tightening reduces their scope to charge a risk premium. On the other hand, if banks tend to lend even if they cannot fully charge a risky borrower for the risk he represents, monetary policy would be blunted because in a tightening phase, lending rates (to risky borrowers) would only fully adjust to the higher policy rates with a delay in the order of magnitude of 3–7 months. The effect of the usury rate is also asymmetrical. In case of a loosening of monetary policy, there should not be a delay in the downward adjustment of interest rates.

Centralization of deposits

17. A significant share of the funds collected through administrative savings products are centralized in a national savings fund, the *Fonds d'Epargne* (FdE). This centralization applies to all funds collected in the *Livrets A* and *Livrets bleu*, (virtually) all other deposits collected by *La Poste*, and parts of the funds collected in *Codevi* and some other accounts. As of end-2003, €217 billion was centralized in the FdE, out of a total of about €529 billion in administered deposits and €1,073 billion in bank deposits (Table 1). The collecting institutions generally receive a remuneration to cover their collection costs, expressed as a percentage of their stock of centralized deposits of a given instrument.

18. The centralization of deposits could introduce a degree of instability in the banks' deposit base, in function of the spread between the *Livret A* rate and market rates. If monetary policy is loosened, driving down market interest rates, unregulated bank deposit rates would tend to follow market rates down. However, if the *Livret A* rate remains unchanged, administered savings products become more attractive relative to alternative bank deposits. As a result, savers will tend to redirect their savings towards the administered savings products. As a result of centralization and of the oligopoly on the distribution of the *Livret A* and *bleu*,[48] this will imply a net loss of resources for the banks. Overall, a rising spread between the *Livret A* rate and the policy rate will put downward pressure on banks' resources, while a declining spread will do the opposite. This could partially undo the normal effects of monetary policy on banks' liquidity. This effect is, to some extent, visible in Figure 1.

Figure 1. Growth of Deposits in *Livrets A* and *Bleu* and Spread Between the *Livret A* and Policy Rates (In percent)



Sources: *Banque de France;* IMF, IFS; and IMF staff calculations.

19. In practice, however, the liquidity effects have been contained because banks have sought to maintain the rates on their other deposit products at levels that are competitive with the *Livret A* rate. Hence, deviations between the *Livret A* and market rates have impacted more on banks' cost of resources than on their liquidity. An additional factor limiting the liquidity effects is the fact that the most sophisticated and proactive savers are often the ones who have already reached the limit of their *Livret A* deposits.

[48] Only *La Poste* and the *Caisses d'Epargne* can distribute the *Livret A*. The distribution of the *livret bleu*, which for customers is in practice the same as a *Livret A*, is limited to *Crédit Mutuel*.

20. The FdE is managed by a state-owned financial institution, the *Caisse de Dépôt et Consignation* (CDC), in function of certain public policy objectives. The most important of these is the financing of social housing projects, but funds are also invested in loans to local public authorities and some other projects (Table 2). However, half of the assets of the FdE are invested in financial markets, mainly in government securities.

Table 2. Assets of the *Fonds d'Epargne,* end-2002

	Amount (In billions of euros)	In percent of total
Loans	111.5	49.2
Housing-related loans	85.2	37.6
Equipment loans	6.0	2.6
Other loans	20.3	9.0
Securities	112.5	49.6
Shares	5.2	2.3
Public-sector securities and assimilated	66.5	29.3
Bonds and other fixed-income securities	40.8	18.0
Other assets	2.7	1.2
Total assets	226.7	100.0

Source: CDC annual reports; and IMF staff calculations.

21. On the asset side, the management of the FdE on the basis of public policy principles is likely to reduce the sensitivity of the centralized part of the banking system to economic conditions in general and to the stance of monetary policy in particular. The demand for loans from the FdE is determined to a large extent by public (policy) needs, and is relatively insensitive to interest rates. Conversely, the supply of funds to a large extent adjusts passively to demand, as surplus funds are invested in financial markets. If, as described above, the spread between administered and market rates increases, leading to increasing inflows into the FdE, that is unlikely to lead to an increase in loans provided by the FdE. To the contrary, since social housing companies can also borrow from other sources, a high spread will tempt them to borrow elsewhere rather than from the FdE. In combination with the effects described above, this could lead to a reduction in the supply of bank credit in times of a loosening of monetary policy that is not accompanied by a reduction in the *Livret A* rate. The reason is that the increased spread encourages depositors to move their savings towards centralized deposits and at the demand side discourages the FdE's borrowers from taking up new loans. As a result, an increased share of deposits is invested in euro-area financial markets instead of being used to finance loans.

Restrictions on the use of administered deposits (earmarking)

22. Most deposits collected through administered savings schemes can only be used for specific purposes. The funds centralized in the FdE can only be used for certain public policy objectives; PEL and *Comptes d'Epargne-Logement* (CEL) deposits can only be invested in mortgage loans, some other real estate-related assets, and energy-saving projects; and *Codevi* deposits can only be used for loans to small and medium sized companies. Overall, this earmarking of banks' funds reduces the asset-side flexibility in the balance sheet of the banking system (including FdE), and it may lead to incentives that are not aligned with changes in monetary policy. For example, if monetary policy is loosened, leading to lower market rates and unregulated deposit rates, households may increase their deposits in older, higher-yielding PELs. These increased inflows could push banks to increase their mortgage lending, potentially at the expense of other loans. Hence, changes in the stance of monetary policy could conceivably lead to a redirection of lending that may, to some extent, blunt the overall impact of the change in monetary policy. This would especially be the case if the sectors favored by the earmarking rules have an inelastic demand for loans.

Differential tax treatment of investments

23. The tax system favors certain investments over others. For example, there are tax breaks for equity investments in small and medium sized enterprises, there are differences in tax treatment between bonds and shares, and often the government promotes specific investments by putting in place tailored tax breaks (for example, for buying a car).

24. Overall, these tax incentives tend to increase the cost of reallocating investments in function of changing circumstances, and hence reduce economic agents' ability to react to adjustments in the monetary policy stance. This is especially the case when tax advantages are contingent on economic agents maintaining their investments for a prescribed period.

25. It must be noted that this is not a typically French phenomenon. Most countries attempt to promote investments in certain privileged sectors through tax incentives. In the United States, for example, the tax system strongly encourages investments in housing.

B. Structural Features of the Banking Sector

Balance sheet structure

26. Given the nonremuneration of demand deposits, and the strong tax incentives favoring life insurance products over bank deposits, one would expect bank deposits in general, and demand deposits in particular, to be lower in France than would otherwise be the case. A comparison of the structure of the French banking system's balance sheet (including the CDC), with that of its Euro-area peers, appears to confirm this (Tables 3 and 4). The tables show not only that, relative to the banking system's balance sheet total as well as to GDP, deposits and demand deposits are a significantly less important resource in France than elsewhere. This is further exacerbated by the fact that a significant part of these reduced resources are centralized at the CDC (included here). All in all, noncentralized deposits available to the banking system amount to only 51 percent of GDP, against 91 percent in the rest of the euro-area.

27. This relative shortage of deposits appears to be associated with an overall lower level of bank intermediation, as bank credit is also significantly less important in France than in other euro-area countries. Lending by French banks (excluding CDC) amounts to about 69 percent of GDP, as against 101 percent for the banks of the rest of the euro-area. In fact, relative to the deposits they have available, the French banking system does as well as their euro-area colleagues. The aggregate loan-to-deposit ratio in France is 1.14, slightly better but close to that in the rest of the euro-area, at 1.11. However, the French average is dragged down by the CDC's low loan-to-deposit ratio. Excluding the CDC improves the ratio to about 1.35. Finally, the comparison also appears to indicate that money market funds are especially well developed in France, which is most likely related to the existence of the *ni-ni*.

Table 3. France: Structure of French and Euro-Area Banking Systems' Balance Sheets, End-2002

(In percent of total assets)

	French Banks	Non-French Euro-area Banks	Euro-area Banks
Assets			
Interbank loans to euro-area MFIs	23.0	20.8	21.3
Credit to euro-area non-MFI borrowers	27.8	38.3	36.0
O*f which:* lending for house purchases	8.4	12.4	11.5
O*f which:* lending by CDC	2.7	0.0	0.6
Euro-area securities	25.0	17.1	18.9
Non-euro-area and other assets	24.1	23.8	23.8
Total	100.0	100.0	100.0
Liabilities			
Interbank borrowing from euro-area MFIs	26.4	20.7	21.9
Deposits of euro-area non-MFI residents	24.5	34.3	32.1
O*f which:* demand deposits	7.0	11.5	10.5
O*f which:* deposits centralized at the CDC	5.8	0.0	1.3
Debt securities	20.8	18.1	18.7
O*f which:* money market funds	7.3	1.6	2.8
External and other liabilities	21.5	21.3	21.3
Capital and reserves	6.8	5.6	5.9
Total	100.0	100.0	100.0

Sources: ECB Monthly Bulletin; diverse *Banque de France* publications; CDC annual reports; and IMF staff calculations.

Table 4. France: Structure of French and Euro-Area Banking Systems' Balance Sheets, Relative to GDP, End-2002

(In percent of GDP)

	French Banks	Non-French Euro-area Banks	Euro-area Banks
Assets			
Interbank loans to euro-area MFIs	62.9	55.2	56.8
Credit to euro-area non-MFI borrowers	76.0	101.3	95.9
Of which: lending for house purchases	23.0	32.9	30.8
O*f which:* lending by CDC	7.3	0.0	1.6
Euro-area securities	68.4	45.4	50.3
Non-euro-area and other assets	66.0	62.9	63.6
Total	273.3	264.8	266.6
Liabilities			
Interbank borrowing from euro-area MFIs	72.1	54.7	58.5
Deposits of euro-area non-MFI residents	66.9	90.9	85.7
Of which: demand deposits	19.1	30.5	28.1
Of which: deposits centralized at the CDC	15.9	0.0	3.4
Debt securities	56.8	47.9	49.8
Of which: money market funds	20.0	4.1	7.5
External and other liabilities	58.9	56.4	56.9
Capital and reserves	18.7	14.9	15.7
Total	273.3	264.8	266.6

Sources: ECB Monthly Bulletin; diverse *Banque de France* publications; CDC annual reports; and IMF staff calculations.

In practice, however, investments in the money market come mainly from companies, not from individuals, which would suggest that the latter have a lower ability to circumvent the *ni-ni*.

28. The relatively low level of bank intermediation implies that any transmission channel that depends on the banking system will tend to be weaker in France than in the rest of the euro-area.

Competitive situation

29. Competitive forces within the banking system, economic rationale and the quest for "national champions" have led to significant concentration in the French banking sector, which is now dominated by six large banks. Although there is no conclusive evidence that the level of competition has deteriorated, banks have been developing a number of strategies to bind their customers. Among those are aggressive pricing on mortgage loans, the sale of packages of products, and the use of the branch network and personalized service as a significant element of competition.[49] In part thanks to such strategies, banks now rely on fees and commissions for a significant part of their profitability and clients face significant disincentives to changing banks. Those factors may contribute to a relatively low price flexibility and sensitivity (in particular, interest rate sensitivity) of the retail banking market, which in turn could reduce the impact of the interest rate channel of monetary policy.

Role of the remaining public financial institutions

30. Two state-owned financial institutions continue to play an important role in the financial system. They are the *Caisse de Dépôt et Consignation* (CDC) and *La Poste*, the post office system. The main effect of the presence of these financial institutions in the market is that, through their less commercially oriented policies, their importance and the competitive pressure they exert, they tend to reduce the overall sensitivity of the financial system to market forces.

31. Apart from managing the FdE, the CDC also collects certain legally protected deposits (€37 billion at end-2003), which it invests in a variety of loans, financial market instruments and equity investments. To process and service those deposits, the CDC has an agreement to use the regional offices of the Treasury as a branch network. The CDC also has significant own funds (€12.5 billion), which it invests similarly. These investments tend to be based not solely on commercial grounds, but also on public policy objectives. For example, the asset portfolio includes long-term investments in loans for urban renewal and public housing projects, credit to "social economy" projects, and seed capital for small and medium-sized enterprises. Overall, the equity investment policy of the CDC has recently been reoriented toward taking stakes in small and medium-sized companies that cannot find

[49] Overall, the French banking system's branch network has resumed growing in the last few years.

financing in the market, and nurturing those companies to growth. Recourse is also made to the CDC for certain public interventions. For example, during 2003, CDC provided a bridge loan at the request of the government, as part of the government-led package in support of Alstom. The public policy nature of investment decisions reduces the sensitivity of CDC's asset portfolio to interest rates and the general economic environment. Hence it may reduce sensitivity to the stance of monetary policy. In addition, the CDC manages a significant part of France's pension funds and maintains large stakes in two important financial institutions, the *Caisses d'Epargne* and the insurance company CNP.

32. *La Poste* conducts only limited banking services. It can collect most kinds of deposits, but in terms of credits, *La Poste* can only provide PEL or CEL-based mortgage loans and associated unregulated mortgage loans. Most of the deposits it collects (the main exception being the deposits in postal checking accounts) are centralized in the FdE and managed by the CDC. With 13,000 post offices providing financial services, it has the largest branch network in the French banking industry. And because this network is shared between the financial and mail activities, the distribution costs per distributed financial product are reduced and not clearly identifiable. *La Poste* also benefits from certain tax and other advantages. The main impact of the presence of *La Poste* in the market is that it tends to provide strong competition to other banks on specific products and has greatly contributed to the success of the administered savings products. Because almost all of the administered deposits it collects are centralized, it reinforces the impact of centralization as discussed above. As a distributor of mortgage loans, it has offered very competitive rates (dumping rates, according to some other bankers) and gained significant market share in recent years, in part because the arrangement it worked under rewarded it for the volume of loans it sold, regardless of price. The mortgage loans it sold stayed off its balance sheet (remaining on that of the FdE), and *La Poste* only received a fixed remuneration based on its outstanding stock of mortgage loans. As a result of its often less commercial behavior and its extensive network, the presence of *La Poste* in the market has reduced the flexibility of other banks to adapt to changing circumstances, including changes in the stance of monetary policy.

33. Recent reform efforts have gone in the direction of placing *La Poste* on a more commercial footing. On February 26, 2004, a new convention was signed between the CDC and *La Poste* that modified the way it was remunerated for distributing mortgage loans, effective retroactively from January 1, 2004 onwards. Under the new system, instead of a fixed commission, *La Poste* receives the profits on its mortgage portfolio, which however, remains on the balance sheet of the FdE. *La Poste* has also requested to be able to distribute mortgage loans not connected to a PEL, as well as consumer loans. The government, has in principle, agreed to the first of these requests, but on condition that the financial services of *La Poste* are reorganized into a separate banking entity, licensed by the CECEI, supervised by the *Commission Bancaire*, and subject to the same legal and regulatory framework as other banks. The new postal bank will also need to have its own accounts, separate from postal services, to increase transparency and avoid cross-subsidization. Finally, with the exception of the *Livret A* and deposits collected through a few other administered savings schemes, the

postal bank will manage its own balance sheet, rather than passing most of the deposits it collects on to the FdE.

C. Idiosyncrasies Related to Asset Markets

Housing market

34. The French housing market is characterized by a relatively low turnover and by some rigidity in financing arrangements. Typical French households tend to buy a house only once or twice in their lifetime, if at all. Home ownership rates are relatively low in France,[50] perhaps to some extent because of the widespread availability of low-cost rental housing through social housing programs. An important element in the low turnover on the housing market is the transaction costs involved. A sale of real property needs to be done through a notary. The charges a notary applies to such transactions include 4.89 percent in registration rights (a tax), an honorarium of between 0.825 (on the amount of the transaction above a threshold of €16,769.40) and 5 percent (on the part of the transaction amount up to €3,049), and diverse costs of between €458 and €1,525[51] (Table 5). Real estate agents typically charge a commission of 4–10 percent, depending on the size of the transaction.[52]

Table 5. Typical Transaction Costs Charged by the Notary on the Sale of Existing Residential Real Estate

Transaction Amount	Transaction Costs	*Of which:* Taxes	Transaction Costs (In percent of transaction amount)
	(In euros)		
10,000	1,794	499	17.9
20,000	2,458	998	12.3
50,000	4,251	2,495	8.5
100,000	7,240	4,990	7.2
250,000	16,205	12,475	6.5
500,000	31,146	24,950	6.2
1,000,000	61,030	49,900	6.1
10,000,000	598,933	498,100	6.0

Sources: *Agence Nationale Pour l'Information sur le Logement* website (www.anil.org); and IMF staff estimates.

35. In terms of financing, the French mortgage system (*hypothèque*) is relatively expensive and inflexible, requires extensive formalities that take time to arrange, and does not provide the lender with full security. The costs related to establishing a mortgage vary depending on the type of loan, but they typically include an honorarium for the notary of between 0.66 percent (for very large amounts) and 3.9 percent (for very small amounts), a tax of 0.61 percent (waived for some types of loans, including PEL loans), and a few hundred euros in various costs. In most cases, these costs total between 1.5 percent and 5.0 percent of

[50] According to Eurostat, 53 percent of French households owned their accommodation in 1998, against 59 percent on average in the EU, 82 percent in Spain, 71 percent in Belgium and Italy, and 69 percent in the United Kingdom. However, the French rate of ownership was higher than in Germany (41 percent), the Netherlands, and Austria (both 51 percent).

[51] Source: www.guideducrédit.com

[52] Source: www.lemoneymag.com

the loan amount.[53] If the mortgaged property is sold before two years after the end of the original loan maturity, an additional fee of between 0.5 percent and 2.0 percent is due to lift the mortgage *(mainlevée d'hypothèque*). A somewhat cheaper alternative is a notarized right for a lender to be paid ahead of almost all other creditors (*Privilège de prêteur de deniers*, or PPD). A PPD is subject to similar costs and fees as a mortgage, including the *mainlevée*, but it typically costs about a third less. Realizing a mortgage is time consuming, costly and not always successful. It requires a court procedure and, according to bankers, courts tend to sympathize with debtors and are reluctant to evict families from their house. The procedure routinely takes more than a year.

36. In response to the high costs and other disadvantages of mortgages and PPDs, alternative guarantee mechanisms have been developed. In many cases, banks now lend without mortgage or PPD, instead accepting a guarantee (*caution*) provided by a third party. While such a third party could be another person (e.g., a relative), most often it is a specialized financial company, such as *Crédit Logement*, a company owned by several large banks. For qualifying borrowers, these institutions guarantee the servicing of the loan, in return for an upfront fee paid by the borrower. The fee typically consists of two parts: a regular fee, and participation in the guarantee company's reserve fund. Of the latter contribution, 75 percent is reimbursed at the end of the guarantee arrangement (regardless of whether this end comes on or ahead of schedule). Apart from significantly lower costs, the *caution* offers greater flexibility and other advantages. It does not penalize early repayments of loans or the sale of a property before the loan that financed it reaches maturity. It also allows a more flexible approach to a borrower's financial difficulties. Guarantee companies advertise that in such cases, they seek the best possible solution in consultation with borrower and lender. If a sale of the property is needed to overcome these financial difficulties, guarantee companies allow a borrower to sell the property himself, rather than to resort to a forced sale through an auction, which tends to yield a lower price.

37. Apart from the mortgage or guarantee costs, mortgage loans come with a one-time processing cost charged by the lender, which is typically about 1 percent of the loan amount (*frais de dossier*). Borrowers are also usually required to insure their mortgage loan in cases of death or disability, at a premium of about 0.4 percent of the loan amount. In many cases, this premium is not adjusted in line with the declining principal during the lifetime of the loan.

38. Refinancing of mortgages happens in France but is significantly less frequent than in the United States. The main reason is that the level of fixed costs incurred in such an operation makes it profitable to refinance only in case of significant declines in interest rates. By law, early repayments of mortgage loans must be allowed at a penalty that can be

[53] The source for these estimates, and for some of the other estimates provided in this paragraph, is: www.lemoneymag.com

negotiated freely between lender and borrower, subject to a cap equal to the lower of 3 percent of the amount repaid early or six months of interest.

39. As noted by the ECB (2003), only 14 percent of mortgage loans in France are at variable rates, which is in line with the situation in countries such as Belgium, Germany, and the Netherlands, but contrasts starkly with a number of other euro-area countries, most notably Spain, Italy, Luxembourg, and Ireland. Another factor putting France apart from most of the rest of the euro-area is its low level of mortgage debt, 22 percent of GDP in 2001. Within the euro-area, only Greece, Italy, and Finland scored lower.

40. In a study comparing European mortgage markets,[54] Low, Sebag-Montefiore, and Dübel (2003) find that, compared to other European countries, France's mortgage market is characterized by:

- low profitability (the lowest in their sample);
- significant government involvement;
- low loan-to-value (LTV) ratios;
- relatively short loan terms (in part because of the requirement that people pay off their loan within their working lifetime, in combination with the expected significant prior savings);
- good product variation in some respects;
- limited product variation in other respects (in particular: limited availability of second mortgages and no possibility for cash-out mortgage borrowing / home equity loans);
- mortgage lending is focused on people in their 30s and 40s;
- relatively low transparency;
- the existence of usury legislation;
- branch-driven distribution; and
- high transaction costs.

41. These features of the French housing and mortgage markets make residential real estate a relatively inflexible element in French households' asset portfolios. The low turnover likely affects the speed of price adjustments and contributes to a perception of housing as an asset providing a service and less as an asset with a financial value, reducing wealth effects. The facts that most loans are fixed-rate and that refinancing is relatively expensive, make households' (mortgage) interest rate costs largely insensitive to changes in market interest rates. And the high transaction costs and absence of cash-out options limit households' ability to use what is usually their most valuable asset as a financial tool to adjust to changing financial circumstances.

[54] The countries studied are Denmark, France, Germany, Italy, the Netherlands, Portugal, Spain, and the United Kingdom.

Equity markets

42. Compared to other countries, French households do not hold large amounts of listed shares in their portfolio. In 2000, around the peak of the recent equity bull market, only 5 percent of households' financial assets were directly invested in listed shares (Table A1). To some extent, this was compensated by indirect holdings through mutual funds and insurance policies, as well as by relatively high estimated holdings of unlisted shares. However, this investment profile, in combination with the lack of visibility regarding the value of unlisted shares, is likely to render French households' perception of their balance sheet relatively insensitive to developments in equity markets. This in turn reduces the relevance of the asset price channel of monetary policy (in terms of wealth effects).

D. Idiosyncrasies Related to the Structure of the French Economy

Macroeconomic idiosyncrasies

43. For monetary policy to have a similar impact across euro-area countries, the national economies must be structurally similar. The literature generally finds that this is not the case, in the sense that there remain important idiosyncratic components in the economic growth dynamics of euro-area member states. Nadal de Simone (2002), for example, finds that the French economy is relatively less influenced by a common component in euro-area economic growth than most other member economies, and relatively more by idiosyncratic factors.

44. Compared to the rest of the euro area, the French economy trades less with the non-euro-area world (Table 6). This is likely to render the French economy less sensitive (in a direct way) to variations in the euro's exchange rate, and hence it reduces the importance of the exchange rate channel in France, compared with the rest of the euro area.

Table 6. Trade (Exports Plus Imports) with Non-Euro Area Countries, 2003

(In percent of GDP)

		Non-euro			
	Total	EU	USA	Japan	Other
Euro-area	28.1	6.2	3.8	1.1	16.9
Euro-area excluding France	30.2	6.8	4.1	1.2	18.2
France	20.5	4.3	2.8	1.0	12.4

Sources: ECB; INSEE; and IMF staff calculations.

45. The structure of France's GDP is similar to that in the rest of the euro-area, but household consumption and gross fixed capital formation (investment) are somewhat less important, mainly because government consumption is higher than elsewhere (Table 7). In theory, government consumption is the component of GDP that is least sensitive to monetary policy, while investment is most sensitive and household consumption (in countries other

than France) tends to react to monetary policy as well. Overall, this implies that the composition of France's GDP is likely to make its economy somewhat less sensitive to changes in monetary policy, compared to the rest of the euro-area.

Table 7. Structure of Gross Domestic Product, 2001

(In percent of GDP)

	Household Consumption	Government Consumption	Gross Fixed Capital Formation	External Balance
Euro-area	57.3	19.9	21.1	1.7
France	55.0	23.3	20.2	1.6

Source: Eurostat.

46. On the supply side, differences between the structure of the French economy and that of the rest of the Euro-area are also limited (Table 8). However, manufacturing, construction and trade, transport and communication are relatively less important in France, while services play a more prominent role than in the rest of the Euro-area. To the extent that the former sectors are more sensitive to interest rates (e.g., because they are more capital intensive), this could also contribute to an overall lower interest rate sensitivity of the French economy.

Table 8. Structure of Gross Value Added, 2001

(In percent of total economy)

	Agriculture	Manufacturing	Construction	Trade Transport Communi-cation	Financial Services Business Activities	Other Services
Euro-area	2.4	22.6	5.5	21.2	27.1	21.2
France	2.8	20.1	4.7	19.3	30.1	23.1

Source: Eurostat.

Low leverage of households

47. As in other countries, French households are net creditors. However, both compared to their foreign peers (Table 9) and in absolute terms (Table 10), French households' income and balance sheet leverage is low. As a result, the income effects of interest rates changes (once fully reflected in interest rates on assets and liabilities) tend to be stronger than in countries with higher levels of household leverage. Interest rates changes are also less likely to lead to balance sheet problems among French households.

Table 9. France: Cross-Country Comparison of Household Debt and Financial Wealth, 2000

Country	Financial Liabilities (In percent of gross disposable income)	Financial Wealth (In percent of gross disposable income)	Leverage (In percent)
France	54	308	18
Netherlands	177	583	30
United Kingdom	116	456	26
Italy	45	338	13
Spain	72	286	25
Germany	104	222	47
United States	90	405	22
Japan	100	439	23

Source: Babeau and Sbano (2003).

Table 10. France: Overall Balance Sheet of the French Household Sector, end-2002 (Provisional)

(In billions of euros)

	Assets	Liabilities
Cash	32.6	-
Deposits	865.7	-
Debt securities	63.3	0.3
Credits	19.9	587.3
Equity	680.7	-
Mutual funds	241.3	-
Insurance claims	835.1	-
Other	107.9	171.4
(Financial) net worth		2,087.4
Total	2,846.4	2,846.4

Source: *Banque de France* .

Table A1. France: Cross-Country Comparison of the Composition of Households' Financial Assets and Liabilities, 2000

In percent in total financial assets or liabilities	**France**	**Nether-lands**	**United Kingdom**	**Italy**	**Spain**	**Germany**	**United States**	**Japan**
Assets								
Currency and deposits	30.4	18.1	22.2	24.0	36.2	33.9	11.1	52.9
Money market funds	1.4	0.4	0.0	0.8	2.5	0.8	3.1	0.2
Securities other than shares	2.7	2.3	1.3	18.7	1.9	10.1	6.4	4.5
Directly-held listed shares	5.0	11.5	8.9	8.9	11.0	5.9	33.1	5.0
Directly-held unlisted shares	19.8	5.3	8.5	18.7	22.7	9.7		3.3
Mutual funds (other than money market mutual funds)	9.0	5.5	5.8	15.9	9.9	10.5	12.9	2.4
Insurance claims	23.3	15.4	27.5	6.2	6.2	13.6	7.1	17.7
Of which: unit-linked policies	*4.9*	*5.7*	*11.6*	*1.9*	*1.2*	*0.3*		
Pension funds	1.5	37.7	22.1	1.2	5.3	5.2	23.8	9.7
Others	6.9	3.8	3.7	5.5	4.3	10.2	2.5	4.4
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Liabilities								
Mortgage debt	61.0	79.0		41.0	64.0	63.0	69.0	55.0
Consumer credit	20.0	6.0		8.0	24.0	15.0	23.0	13.0
Professional loans	19.0	16.0		51.0	12.0	21.0	8.0	32.0
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

Source: Babeau and Sbano (2003).

Overview of Administered Savings Products

Product	**Eligibility**	**Remuneration**	**Tax treatment**	**Deposit Limits** 1/	**Withdrawal rules/ term**	**Distribution by**	**Destination of funds**
Livret A	Individuals or legal entities. Maximum one *Livret A* or *livret bleu* per person	Determined by BdF, on the basis of a government-designed formula (2.25%)	Tax exempt	€15,300 (individuals) €76,500 (legal entities)	Freely withdrawable, but interest is only paid until the end of the most recent *quinzaine* 2/	*Caisses d'Épargne* *La Poste*	CDC (100%)
Livret bleu	Individuals or legal entities. Maximum one *Livret A* or *livret bleu* per person	Same as *Livret A* (2.25%)	1/3 of interest is taxed, but tax is paid by *Crédit Mutuel*	€15,300 (individuals) €76,500 (legal entities)	Freely withdrawable, but interest is only paid until the end of the most recent *quinzaine*	*Crédit Mutuel*	CDC (100%)
Codevi	Individuals with tax residence in France. Maximum one per person and two per household	Same as *Livret A* (2.25%)	Tax exempt	€4,600	Freely withdrawable, but interest is only paid until the end of the most recent *quinzaine* and withdrawals can only take place in branch were the account is held	Free distribution by French financial institutions	CDC: 6.5–9.0 % of deposits collected by banks 50% of deposits collected by *Caisses d'Épargne* 100% of deposits collected by *La Poste* Small and medium enterprises(SMEs): deposits not centralized at CDC must be onlent to SMEs
LEP	Low-income individuals with tax residence in France 3/ Maximum one per person and two per household.	Set by the government (3.25%) 4/	Tax exempt	€7,700		Free distribution by French financial institutions	CDC: 85% of deposits 100% of deposits collected by *La Poste*

Livret jeune	Individuals with tax residence in France, 12–25 years old	Free, but at least equal to *Livret A*	Tax exempt	€1,600	Freely withdrawable, but interest is only paid until the end of the most recent *quinzaine*	Free distribution by French financial institutions	
CEL	One per individual	Set by the government. Currently 1.5%, plus an interest rate subsidy of 0.75% paid by the state if and when a loan is taken up. 5/	Tax exempt, except social taxes (10%)	€15,300	Freely withdrawable. Gives right, after 18 months, to a mortgage loan of up to €23,000 at a predetermined low interest rate.	Free distribution by French financial institutions	Deposits stay in institution that collected them, except in the case of *La Poste*, which forwards them to CDC
PEL	One per individual	Set by the government. Currently 2.5% plus an interest rate subsidy of 1 % paid by the state if and when a loan is taken up. 5/	Tax exempt, except social taxes (10%)	€61,200 (excl. capitalized interests)	Min 4, max 10 year term. Gives right to mortgage loan up to €92,000 at a predetermined interest rate.	Free distribution by French financial institutions	Deposits stay in institution that collected them, except in the case of *La Poste*, which forwards them to CDC
Other *livrets*	No restrictions	No restrictions	Fully taxed (25%)	No limit		Free distribution by French financial institutions	Collecting institutions

Sources: IMF (1999), CNCT (2002), www.patrimoine.com (2003), www.ctrop.net (2003), Nasse and Noyer (2003)

1/ As of December 31, 2001, in euros.

2/ *Quinzaine* = standard two-week period used for the calculation of interest.

3/ In 2003, the threshold for eligibility for an LEP was an income tax of 672 euros or less paid in 2002 on an individual's 2001 income. This threshold is revised each year.

4/ In addition to the ex-ante published rate of remuneration, deposits in a LEP receive an additional ex-post compensatory remuneration in case inflation is higher than the administered interest rate. When applicable, this compensatory remuneration is set by arrest issued by the MINEFI. The rate on the LEP was reduced from 4.25 percent to 3.25 percent on August 1, 2004.

5/ For plans opened before December 12, 2002, the interest rate subsidy is unconditional and paid on a regular basis, together with the interest paid by the bank. For plans opened after that date, the interest rate subsidy is paid as a lump sum at the closing of the PEL-based mortgage loan.

Definition of Variables Used

Variable	Source	Period of Observation	Remarks
Consumption	Quarterly Accounts - INSEE Variable TD_P3M_D1	1978:01 - 2003:04	
Real disposable income	Quarterly Accounts - INSEE Variable TD_B6_S143	1978:01 - 2003:04	Deflated by consumption price (TD_P3M_D3/TD_P3M_D1)
Inflation rate	Quarterly Accounts - INSEE		Derived from consumption price index Derived from consumption price index
Nominal policy rate	International Financial Statistics	1974:01 - 2004:01	French repurchase agreement rate up to 1998:04 European overnight interbank rate from 1999:01
10-Year government bond rate	International Financial Statistics	1970:01 - 2003:04	
Nominal *Livret A* rate	*Banque de France 1/*	1971:01 - 2004:01	
Nominal PEL rate	*Banque de France 1/*	1971:01 - 2004:01	Deposit rate for new contracts
Nominal consumption credit rates Rate for short-term loans below €1524 Overdraft rate Rate for short-term loans above €1524 Rate for medium- and long-term loans	*Banque de France 1/*	1990:02 - 2004:01	Definitions of the rates derived from the usury legislation
Nominal mortgage rates	*Banque de France* 1/	1990:02 - 2004:01	Rates for mortgages at fixed and variable rates
Nominal credit rates to enterprises Overdraft rate Discount rate Rate for other short-term loans Rate for medium- and long-term loans	*Banque de France* 1/	1984:02 - 2004:01	Definitions of the rates derived from the usury legislation
All real rates			Deflated using contemporary inflation

1/ The most recent observations of these series are available on the *Banque de France* website (http://www.banque-france.fr/)

Dickey-Fuller (GLS) Tests for Unit Roots

$$\Delta y_t = \text{constant} + \text{trend} + \rho y_{t-1} + \text{Sum}\,(\delta_i \Delta y_{t-i}) + \varepsilon_t$$

y	Lags 1/	Estimation Period	Statistics for ρ=0 for the Variable y 2/ 5 % Critical Value = -2.89	Statistics for ρ=0 for the Variable Δy (Without Trend) 2/ 5 % Critical Value = -1.95
Consumption	1	1979:01 - 2003:04	-1.34	-3.27
Real disposable income	3	1979:01 - 2003:05	-1.23	-2.71

$$\Delta y_t = \text{constant} + \rho y_{t-1} + \text{sum}\,(\delta_i \Delta y_{t-i}) + \varepsilon_t$$

y	Lags	Estimation Period	Statistics for ρ=0 for the Variable y 2/ 5 % Critical Value = -1.95	Statistics for ρ=0 for the Variable Δy (Without Trend) 2/ 5 % Critical Value = -1.95
Inflation	3	1979:01- 2003:04	-0.39	-5.59
Real policy rate	2	1979:01- 2003:04	-0.75	-8.22
Real consumption credit rate	1	1990:02 - 2003:04	-0.52	-5.31
Real *Livret A* rate	3	1979:01- 2003:04	-0.83	-7.09
Nominal policy rate	4	1979:01- 2003:04	-1.19	-7.09
Nominal consumption credit rate	8	1990:02 - 2003:04	-0.74	-3.79
Nominal mortgage rate	8	1990:02 - 2003:04	0.13	-3.10
Nominal *Livret A* rate	8	1990:02 - 2003:04	-0.37	-6.28
Nominal PEL rate	8	1979:01- 2003:04	-0.24	-6.35

Source: IMF staff calculations.

1/ The number of lags is determined through the maximization of the Schwarz criteria.

2/ ADF statistic is for H0: ρ=0, presence of a unit root.

Estimation of the Long-Term Equation for Short-Term Market Credit Interest Rate Using Phillips-Loretan Nonlinear Estimator

Market Credit Interest Rate = Cointegration Relation + Sum (Lagged Variables) + Sum (Forward Variables)
ρ (Market Credit Interest Rate (-1) – Constant – Cointegration Relation (-1))

All variables in levels - Figures in parenthesis are t-statistics, and significance at the 5-percent level is signaled with an asterisk.

	Short-Term Consumption Credit Rates				Short-Term Credit Rates for Enterprises		
	Rate for Loans Below €1,524		Overdraft Rate	Rate for Loans Above €1,524	Discount Rate	Overdraft Rate	Rate for Other Short-Term Loans
Real policy rate	0.23 (0.15)	0.9 (2.88)*	1.89 (2.29)*	2.26 (11.2)*	2.33 (7.38)*	2.34 (4.86)*	1.87 (4.97)*
Spread between the *Livret A* rate and the policy rate	-0.72 (-0.34)	--- ---	1.66 (1.41)	1.49 (5.51)*	1.76 (3.93)*	1.69 (2.43)*	1.05 (1.93)*
ρ	0.92 (12.3)*	0.93 (13.0)*	0.84 (9.61)*	0.67 (7.09)*	0.61 (5.29)*	0.70 (6.34)*	0.54 (3.74)*
Estimation period	1990:03-2003:03	1990:03-2003:03	1990:03-2003:03	1990:03-2003:03	1990:02-2003:03	1990:02-2003:03	1990:02-2003:03
Degrees of freedom	35	43	35	35	36	36	36
Standard error of dependent variable	2.23	2.23	1.77	2.65	2.53	2.61	2.7
Standard error of estimate	0.51	0.48	0.37	0.26	0.34	0.43	0.5
DW	2.02	2.02	1.70	1.64	1.99	1.89	1.97

Source: IMF staff calculations.

Error-Correction Model for Market Credit Interest Rates

(Figures in parenthesis are t-statistics; significance at the 5-percent level is signaled with an asterisk for the short-term dynamic and the correction-error coefficient[55])

Short Term Market Credit Interest Rates

With the following conventions:
r_{policy} = Nominal Policy Rate
r_{LivA} = Nominal *Livret A* Rate
$spread_{LivA}$ = Spread Between the *Livret A* Rate and the Policy Rate

Rate for Consumer Loans Below €1,524

$$\Delta r = \underset{(c)}{0.83} + \underset{(1.38)}{0.20}\,\Delta r_{-3} + \underset{(1.65)}{0.40}\,\Delta r_{LivA-2} + \underset{(2.34)^*}{0.52}\,\Delta r_{policy-1} - \underset{(-1.55)}{0.45}\,\Delta r_{policy-2} - \underset{(-3.57)^*}{0.19}\left[r_{-1} - \underset{(-6.52)}{8.09} - \underset{(5.26)}{0.73}\, r_{policy-1} \right]$$

$$DW = 1.80\,,\ SEDepVariable = 0.54\,,\ SEEstimate = 0.50$$

$$Estimation\ Period = 1991:02 - 2003:03$$

Overdraft Rate on Consumer Accounts

$$\Delta r = \underset{(c)}{0.20} + \underset{(2.30)^*}{0.31}\,\Delta r_{1} + \underset{(1.29)}{0.20}\,\Delta r_{-2} + \underset{(3.20)^*}{0.33}\,\Delta r_{-4} + \underset{(3.76)^*}{0.58}\,\Delta r_{policy} - \underset{(-1.72)}{0.43}\,\Delta r_{policy-2} - \underset{(-4.06)^*}{0.41}\left[r_{-1} - \underset{(-17.0)}{8.79} - \underset{(6.71)}{1.08}\, r_{policy-1} - \underset{(2.60)}{0.54}\, spread_{LivA-1} \right]$$

$$DW = 1.83\,,\ SEDepVariable = 0.43\,,\ SEEstimate = 0.34$$

$$Estimation\ Period = 1991:03 - 2003:03$$

Rate for Consumer Loans Over €1,524

$$\Delta r = \underset{(2.02)^*}{0.25}\,\Delta r_{-1} - \underset{(-2.50)^*}{0.22}\,\Delta r_{-3} - \underset{(-3.78)^*}{0.52}\,\Delta r_{LivA-2} - \underset{(-1.72)}{0.21}\,\Delta r_{LivA-3} - \underset{(-2.59)^*}{0.35}\,\Delta r_{LivA-4} + \underset{(5.31)^*}{0.68}\,\Delta r_{policy-1} - \underset{(-2.12)^*}{0.36}\,\Delta r_{policy-2} + \underset{(1.96)^*}{0.22}\,\Delta r_{policy-4} - \underset{(-4.09)^*}{0.29}\left[r_{-1} - \underset{(-2.12)}{1.35} - \underset{(12.3)}{2.23}\, r_{policy-1} - \underset{(6.53)}{1.47}\, spread_{LivA-1} \right]$$

$$DW = 2.15\,,\ SEDepVariable = 0.34\,,\ SEEstimate = 0.23$$

$$Estimation\ Period = 1991:02 - 2003:03$$

[55] T-statistics in the long-term dynamic cannot be interpreted, their significance was assessed in previous steps, described in Appendices V and VII.

Discount Rate for Enterprises

$$\Delta r = \underset{(1.65)}{0.18}\Delta r_{-3} + \underset{(2.73)^*}{0.25}\Delta r_{-4} - \underset{(-2.54)^*}{0.66}\Delta r_{LivA-1} - \underset{(-4.00)^*}{0.85}\Delta r_{LivA-2} + \underset{(4.89)^*}{0.63}\Delta r_{policy} + \underset{(2.69)^*}{0.42}\Delta r_{policy-1}$$
$$- \underset{(-5.80)^*}{0.39}\left[r_{-1} + \underset{(3.51)}{2.03} - \underset{(13.0)}{2.43}\, r_{policy-1} - \underset{(7.50)}{1.87}\, spread_{LivA-1} \right]$$
$$DW = 2.02\,,\ SEDepVariable = 0.49\,,\ SEEstimate = 0.34$$
$$Estimation\ Period = 1991:01 - 2003:03$$

Overdraft Rate on Company Accounts

$$\Delta r = \underset{(1.92)}{0.18}\Delta r_{-2} + \underset{(2.46)^*}{0.19}\Delta r_{-3} + \underset{(3.38)^*}{0.33}\Delta r_{-4} - \underset{(-3.28)^*}{0.88}\Delta r_{LivA-1} - \underset{(-4.88)^*}{1.02}\Delta r_{LivA-2}$$
$$+ \underset{(4.98)^*}{0.71}\Delta r_{policy} + \underset{(1.66)}{0.33}\Delta r_{policy-1} - \underset{(-2.22)^*}{0.34}\Delta r_{policy-4}$$
$$- \underset{(-4.71)^*}{0.41}\left[r_{-1} + \underset{(1.99)}{1.22} - \underset{(10.1)}{2.14}\, r_{policy-1} - \underset{(5.07)}{1.47}\, spread_{LivA-1} \right]$$
$$DW = 1.81\,,\ SEDepVariable = 0.52\,,\ SEEstimate = 0.37$$
$$Estimation\ Period = 1991:01 - 2003:03$$

Rate for Other Short Term Loans to Enterprises

$$\Delta r = \underset{(2.52)^*}{0.27}\Delta r_{-1} + \underset{(1.82)}{0.16}\Delta r_{-2} + \underset{(1.90)}{0.23}\Delta r_{-4} - \underset{(-3.00)^*}{0.95}\Delta r_{LivA-1} - \underset{(-3.37)^*}{0.81}\Delta r_{LivA-2} - \underset{(-1.75)}{0.48}\Delta r_{LivA-4} + \underset{(5.72)^*}{0.78}\Delta r_{policy}$$
$$- \underset{(-4.57)^*}{0.54}\left[r_{-1} + \underset{(3.51)}{1.79} - \underset{(10.9)}{1.99}\, r_{policy-1} - \underset{(4.55)}{1.21}\, spread_{LivA-1} \right]$$
$$DW = 2.11\,,\ SEDepVariable = 0.65\,,\ SEEstimate = 0.48$$
$$Estimation\ Period = 1991;01 - 2003:03$$

Medium- and Long-Term Market Credit Interest Rates

With the following convention:
R_{GB} = Nominal 10-Year Government Bond Rate
R_{PEL} = Nominal Deposit Rate on PEL Contracts

Fixed Mortgage Rate

$$\Delta r = \underset{(2.29)^*}{0.15}\Delta r_{-3} + \underset{(4.06)^*}{0.17}\Delta r_{PEL-3} - \underset{(-4.23)^*}{0.22}\Delta r_{PEL-4} + \underset{(2.69)^*}{0.19}\Delta r_{GB-2}$$
$$- \underset{(-3.13)^*}{0.18}\left[r_{-1} + \underset{(1.39)}{0.74} - \underset{(18.5)}{1.36}\, r_{GB-1} \right]$$
$$DW = 1.97\,,\ SEDepVariable = 0.26\,,\ SEEstimate = 0.16$$
$$Estimation\ Period = 1991:02 - 2003:03$$

Variable Mortgage Rate

$$\Delta r = \underset{(1.56)}{0.19}\,\Delta r_{-3} + \underset{(3.25)^*}{0.29}\,\Delta r_{PEL} + \underset{(1.62)}{0.14}\,\Delta r_{PEL-3} - \underset{(-3.18)^*}{0.20}\,\Delta r_{PEL-4} + \underset{(2.51)^*}{0.20}\,\Delta r_{GB} + \underset{(2.56)^*}{0.22}\,\Delta r_{GB-2}$$
$$- \underset{(-1.97)^*}{0.10}\left[r_{-1} + \underset{(0.62)}{0.69} - \underset{(7.01)}{1.27}\, r_{GB-1} \right]$$

$$DW = 2.14\,,\ SEDepVariable = 0.27\,,\ SEEstimate = 0.20$$

$$Estimation\ Period = 1991:03 - 2003:03$$

Rate for Medium and Long Term Loans to Enterprises

$$\Delta r = \underset{(2.92)^*}{0.24}\,\Delta r_{-4} + \underset{(2.38)^*}{0.25}\,\Delta r_{GB-1} + \underset{(2.18)^*}{0.24}\,\Delta r_{GB-3}$$
$$- \underset{(-2.84)^*}{0.14}\left[r_{-1} + \underset{(1.79)}{1.72} - \underset{(8.84)}{1.33}\, r_{GB-1} \right]$$

$$DW = 1.75\,,\ SEDepVariable = 0.36\,,\ SEEstimate = 0.24$$

$$Estimation\ Period = 1990:01 - 2003:03$$

Estimation of the Long-Term Equation for Medium- and Long-Term Market Credit Interest Rate Using Phillips-Loretan Nonlinear Estimator

Market Credit Interest Rate = Cointegration Relation + Sum (Lagged Variables) + Sum (Forward Variables)
ρ (Market Credit Interest Rate (-1) – Constant – Cointegration Relation (-1))

All variables in levels - Figures in parenthesis are t-statistics, and significance at the 5-percent level is signaled with an asterisk.

	With Administered Rates			Without Administered Rates		
	Mortgage Loans at Fixed Rate	Mortgage Loans at Variable Rate	Medium- and Long-Term loans to Entreprises	Mortgage Loans at Fixed Rate	Mortgage Loans at Variable Rate	Medium- and Long-Term loans to Entreprises
10-year government bond rate	0.94 (2.95)*	0.22 (0.10)	0.31 (0.34)	1.34 (16.0)*	1.32 (6.99)*	1.44 (8.41)*
Spread between the PEL rate and the 10-year government bond rate	-0.78 (-1.37)	-2.10 (-0.52)				
Spread between the *Livret A* rate and the 10-year government bond rate			-1.83 (-1.14)			
ρ	0.81 (10.90)*	0.93 (10.10)*	0.87 (12.40)*	0.80 (8.46)*	0.91 (11.35)*	0.87 (13.20)*
Estimation period	1990:04-2003:03	1990:04-2003:03	1990:02-2003:3	1990:04-2003:03	1990:04-2003:03	1990:03-2003:3
Degrees of freedom	34	34	40	42	42	43
Standard Error of Dependent Variable	2.16	2.24	2.45	2.16	2.24	2.44
Standard Error of Estimate	0.17	0.21	0.27	0.19	0.23	0.28
DW	2.26	2.35	2.06	1.96	2.04	1.77

Source: IMF staff calculations.

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III. Unemployment, Wage Growth, and Job Mobility of Young Workers in France and West Germany[56]

A. Introduction

69. Young workers in Germany enjoy better labor market outcomes than in many countries in continental Europe. In contrast, it is often said that the French labor market is specifically tough on young workers, because they suffer from a typical outsider problem as they are seeking to enter the labor market for the first time. It is also argued that French low-wage workers are put at a disadvantage by the system, to the extent that minimum wage regulations reduce their chances of obtaining jobs.

70. Within the European countries, there are cross-country differences in the incidence of unemployment,[57] which are more noticeable when unemployment rates are observed for particular demographic groups. While the unemployment rate of the prime age workers has in most European countries fluctuated around generally moderate average rates, those of the youth have fluctuated quite widely around considerably higher average rates. There is a clear division between the Nordic countries (with the exception of Finland), where the gaps between youth unemployment rates and the aggregate ones are relatively small, and the Southern European countries, where youth unemployment rates have been persistently at much higher levels than those of prime age (Table 1).

Table 1. Unemployment Rates in Selected European Countries, by Age Group, 2000

	15 to 24	25 to 54	55 to 64
Austria	6.3	4.3	6.7
Belgium	15.2	5.8	3.2
Denmark	6.7	4.1	4
Finland	21.5	8	9.4
France	**20.7**	**9.2**	**7.9**
Germany	**8.4**	**7**	**12.3**
Greece	29.5	9.6	3.8
Italy	29.7	8.5	4.5
Luxembourg	6.4	2	1.4
Netherlands	5.3	2.3	1.9
Norway	10.2	2.6	1.3
Portugal	8.6	3.5	3.3
Spain	25.3	12.3	9.4
Sweden	11.9	4.9	6.1
Switzerland	4.8	2.3	2.7
United Kingdom	11.8	4.4	4.4
United States	9.3	3.1	2.5

Source: OECD, Employment Outlook 2004.

71. It has been stressed in the literature that the unemployment rates of young, unskilled workers are most affected by labor market institutions that impose some kind of wage floor (minimum wages, collective bargaining, employment protection legislation, unemployment benefits, and so on). According to Bertola, Blau, and Kahn (2002), many labor market institutions have stronger and more clear-cut implications for the distribution of wages than for the level of the average wage, and, hence,

[56] Prepared by Paola Giuliano (EUR). This paper is a shortened version of a working paper "Does a four-fold unemployment rate make a difference? Wage growth and job mobility of young workers in France and Germany" written jointly with Till von Wachter (Columbia University). It has benefitted from helpful comments of seminar participants at the French Ministry of Finance, the 2004 CEPR/ECB Labour Market Conference, and the European Summer Symposium in Labor Economics (ESSLE 2004).

[57] Many papers and much empirical effort have been devoted to explaining the causes of unemployment and its variability across countries and regions (Scarpetta, 1996; Nickell and Layard, 1999; Belot and van Ours, 2000; Blanchard and Wolfers, 2000; and Bertola, Blau, and Kahn, 2002).

for the composition of employment and the incidence of unemployment across population groups with different levels of productivity. The incidence of youth unemployment has also been related to the effectiveness of the educational system at easing the transition from school to work (OECD, 2000), to the role of the family at providing income support (Bentolilla and Ichino, 2000) and to the evolution of the relative size of the youth population (Korenman and Neumark, 2000).

72. In this paper, we do not study the causes of French youth unemployment, but rather how costly it is, in terms of career path and wage growth, for French workers to spend such a long period of their life in unemployment. West Germany is used as a benchmark. Economists have looked increasingly at several aspects of education and labor market institutions in Germany for guidance. Germany's apprenticeship system, which many believe greatly facilitates the school-to-work transition, is often held up as an example to emulate and has been credited with reducing youth unemployment (Buechtemann, Schupp, and Soloff, 1993).

73. Youth unemployment in Germany has been systematically below the adult rate, while in France it has been about twice as high. Wage growth has been higher in Germany than in France for the age group 21–26. By the late 20s, however, both differences in wage growth rates and unemployment vanish. This leads to a permanent stable difference in levels of hourly income by age 30. Standard theories of experience accumulation in the spirit of Becker (1964) and Mincer (1974) imply that on-the-job experience accumulation is proportional to time spent working. Thus, observed differences in wage growth and unemployment rates in France and Germany could be driven by differences in early labor force attachment. On the other hand, models of job search imply that high unemployment and job turnover may simply be a sign of beneficial job mobility. Consistent with this observation, it has been noted that young French workers have a much higher entry rate into but also a higher exit rate out of unemployment than their German counterparts (Lauer, 2003).

74. The paper proceeds in two steps. Using large cross-sectional labor force surveys and administrative level datasets, first, it evaluates the importance of job search theory by decomposing wage-growth in "on-the-job" and "between-jobs" growth. If turnover is beneficial for French workers, one should expect higher "between-jobs" wage growth compared to Germany. The decomposition will also be used to assess the overall importance of job mobility in early wage growth in the two countries. Second, it looks at wage growth in the two countries from a human capital perspective, to assess the potential role of labor market attachment (the amount of time spent working) and returns to experience. This approach is crucial to establish the cost of unemployment in the early stages of career and to provide policy guidance. If low labor force attachment causes low wage growth, a policy designed to directly reduce unemployment would be the best option. On the contrary, if returns to experience are driving low wage growth, higher investment in training may be necessary.

75. The results of the analysis indicate that:

- Higher unemployment in France does not appear to be driven by higher mobility induced by search. Although young French workers are more mobile initially, the overall degree and pattern of mobility between jobs is similar in France and Germany. (The patterns of job change reflect in part the widespread use of fixed-term or apprentice contracts in both countries.)

- As a result of the decomposition of wage growth in "between-jobs" and "on-the-job" wage growth, it appears that between-jobs growth contributes similarly to wage growth of young workers in France and Germany (by one third). The rest is explained by differences in on-the-job wage growth.

- It appears unlikely that varying degrees of early labor force attachment can explain the entire difference in wage growth. Instead, lower returns to experience could be responsible for lower early wage growth in France. These results suggest that labor market experience is only a partial substitute for formal training. A simple comparison of hourly wage profiles indicates that this might in particular be the case for those with vocational and intermediate levels of education. For these workers, more explicit training arrangements might be a valid option.

The paper is structured as follows. Section B briefly discusses the institutional environment and provides descriptive evidence on early labor market conditions in France and West Germany. Section C gives an overview of the implications of the main theories of the role of labor market experience, presents the conceptual framework of the paper, and contains the main results. Section D concludes.

B. Labor Market Institutions and Trends in France and Germany

Institutional background

76. Young French and German workers face different institutional environments when exiting secondary school. Almost two thirds of young Germans start an apprenticeship at the end of secondary education, most commonly after nine or ten years of schooling. Apprenticeships last two to three years and involve formal schooling as well as training on the job. During apprenticeships, wages are significantly lower than market wages for similar workers. After apprenticeship training, a small fraction of these workers goes on to become specialized technicians or attends two-year colleges. Workers who stay in school 13 years to obtain a high-school degree either obtain apprenticeship training or go on to university, which can take up to six or seven years. Two noteworthy features of the German system are: first, there is no statutory minimum wage applying to all workers. Instead, employer associations and unions bargain regional industry-level pay scales that only apply to their respective members. Apprentice wages are bargained over separately, and apprentice contracts are by nature fixed-term, i.e., firms do not face a commitment to employ trainees at the end of

training. Second, since Germany has a partial compulsory schooling until age 18, even those who exit school after 9th or 10th grade usually attend some form of vocational training or partial schooling.

77. No large-scale apprenticeship system exists in France. Instead, after nine years of compulsory schooling (commonly until age 15), French youths can choose between either upper level secondary schooling or a variety of vocational schools. This leads to a higher variety of educational degrees in France[58] and, as further discussed below, to a larger fraction of workers without any vocational training than in Germany. Some of the apprenticeship and vocational schemes have been introduced as active labor market policies to reduce youth unemployment (Box 1). The fraction of young French workers that is employed on fixed-term contracts by age is only slightly lower to that in Germany when apprentices are counted. Fixed-term contracts are 6–24 months long and are thus shorter than the average apprenticeship, which lasts three years. In contrast to the German system, France has a national minimum wage (the SMIC).

Data

78. We use nationally-representative data bases for each country, which allow us to measure young workers' employment outcomes and also permit comparisons across age groups. For France, the data are drawn from the Enquête Emploi, collected by INSEE, a yearly labor force survey covering 1/300 of the French population. The dataset includes details on individual workers' net and gross wages; hours of work; educational and demographic characteristics; sector and category of occupation and numerous other individual-specific variables. The dataset has a panel structure, which makes it possible to analyze labor market transitions.

79. The data for West Germany is drawn from the *Mikrozensus*, an annual cross-sectional survey of 1 percent of the German population covering similar variables as the *Enquête Emploi*. Since the *Mikrozensus* is purely a repeated cross-section, the IAB-Subsample (IABS) is also used to construct mobility measures for West Germany. The IABS is a 1 percent sample from the national employment registry of social security records spanning the period from 1975 to 1995 and contains detailed administrative information on wages and employment transitions.

80. The figures shown throughout the paper are from 1993 for West Germany and 1991 and 1993 for France. The difference of unemployment rates and wages by age is stable throughout the 1990s; the pattern does not change substantially for France by the year 2000 (Figure 1) and for Germany by 1996. The age distribution is thus treated as stationary, and differences in cross section are interpreted as informative for longitudinal patterns of interest.

[58] Lauer (2001) contains a detailed discussion and comparison of the French and German education systems.

Box 1. France: Youth Employment Policies in France

Since the mid-1970s, different measures have been developed by the French government to combat youth unemployment. Today, the programs can be classified according to the characteristics of eligible participants, the employment sector (public or private) or the legal status (training course or labor contract). In 2003, 600,000 entrants in the business sector and 400,000 in the nonbusiness sector were financially assisted through public programs.

Three main types of public interventions can be distinguished:

- job creation in the public sector (mainly through wage subsidies) directed at low-skilled unemployed young adults;
- promotion of training programs in the private sector, including both classroom education and on-the-job training; and
- reduction of total labor costs in the private sector, in order to increase the labor demand for unskilled workers

The first type of programs include the *contrat emploi solidarité (CES), contrat emploi consolidé (CEC), contrat emploi jeunes* (which was terminated in 2002), *and contrat emploi ville.* The most representative program in this group is the *contrat emploi solidarité*. This contract is part-time (20 hours) and fixed-term (usually from 3 months to 12 months, but with the possibility to extend it up to 36 months for people with poor employment prospects). The hourly wage is the minimum wage, and the employer is exempt from social security contributions. The CEC is similar in nature to the CES but is for workers experiencing particular difficulties in finding a job and who have been already in CES. It can be fixed-term (CDD) or open-ended (CDI), full-time or part-time (30 hours minimum), from 12 months up to 60 months.

The second type of programs includes several apprenticeship contracts (*contrats de qualification, contrats d'adaptation* and *contrats d'orientation*). These contracts offer part-time work in a firm, complemented by part-time education in a public training center. They vary in length (between six months and three years), the wage is calculated as a fraction of the minimum wage, and they are addressed at different categories of young workers (different levels of education, long-term unemployed, different age groups). The employer is exempt from social security contributions.

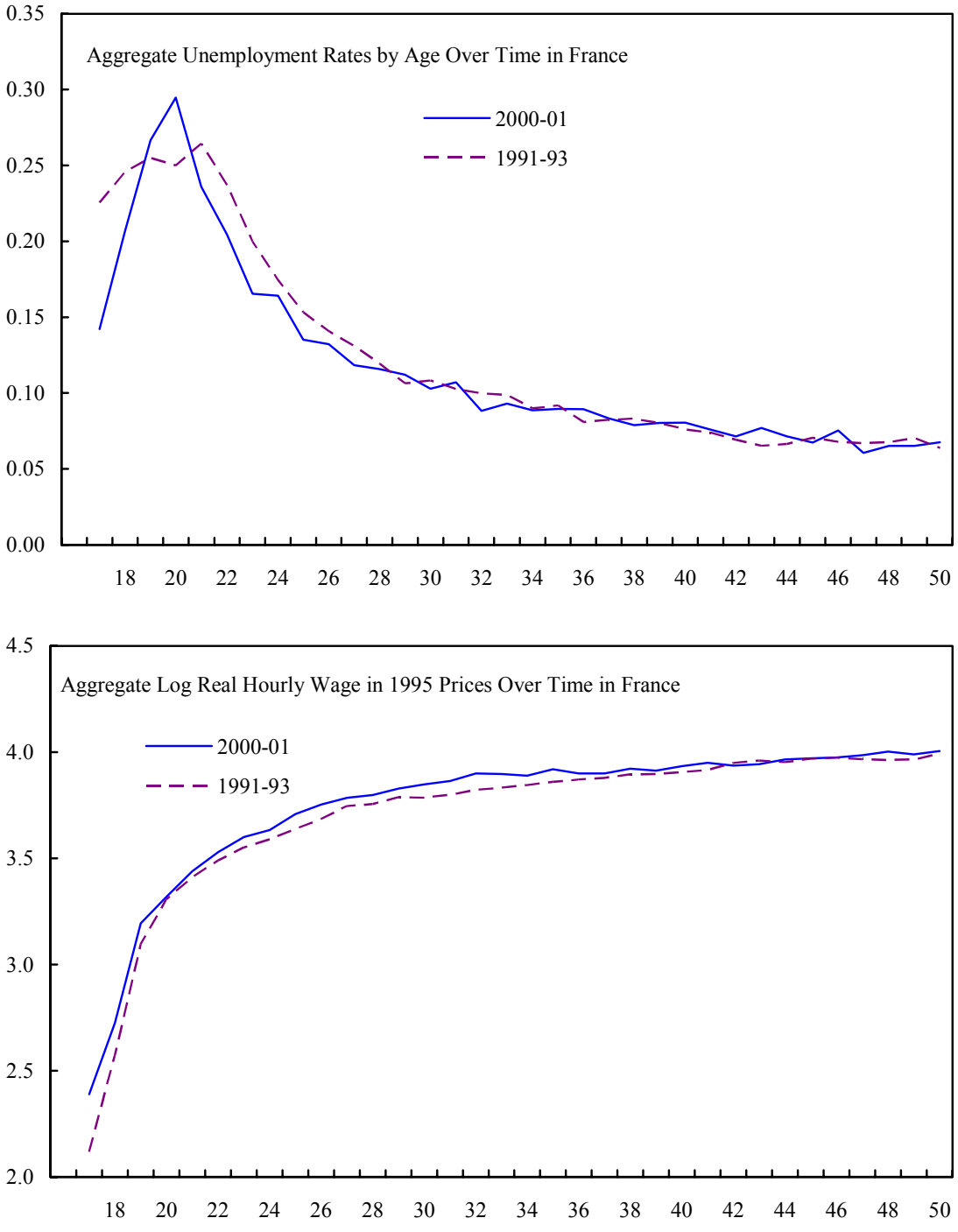
The most representative program of the third type is the *contrat jeunes en enterprises*. Implemented in June 2002, this program reduces for three years the cost of labor for employers hiring (as CDI) workers 22 years old or younger with a level of education lower than secondary school.

Unemployment, labor force attachment, and wages by age and education

81. The French unemployment rate is almost four times the German rate at ages 18 to 22. This difference declines gradually thereafter to be only 3–5 percent by the late 20s. Entry into the labor force is gradual in France, whereas the education and training system in Germany leads to a steep increase in participation by age 18.[59] By age 26, employment and labor force

[59] At around age 21, when most apprenticeships in Germany have ended, participation rates drop slightly. This dip is partly due to a drop in the participation rate of men exiting the labor force to attend military or civil service.

Figure 1. France: Unemployment and Wage Behavior



Source: IMF staff calculations.

participation are very similar in both countries (Figure 2).[60] The same patterns hold by broad education groups (Figures 3 and 4).[61] Several things are apparent from the education decomposition. First, those with no vocational and vocational training make up two thirds of the labor force for mature workers. Second, the fraction of workers with no vocational training is much larger in France, but it is falling with age. Third, large changes in the educational composition of the labor force occur in both countries before age 22, and this might affect the aggregate comparison of wage growth.[62] Finally, there are no differences between the two countries in unemployment rates for highly educated workers. Differences in unemployment for workers with low and intermediate levels of education are pronounced at younger ages, but they disappear in the late 20s.

82. German workers enter the labor force with slightly higher wages than their French counterparts, but French workers catch up quickly and have higher wage growth until age 21 (Figure 5).[63] The same pattern holds by education group (Figure 6). While part of the development prior to age 22 is due to patterns of school or training completion, the differences past age 22 may be due to differences in on-the-job human capital accumulation or varying degrees of beneficial job mobility. This issue is discussed in the next section.

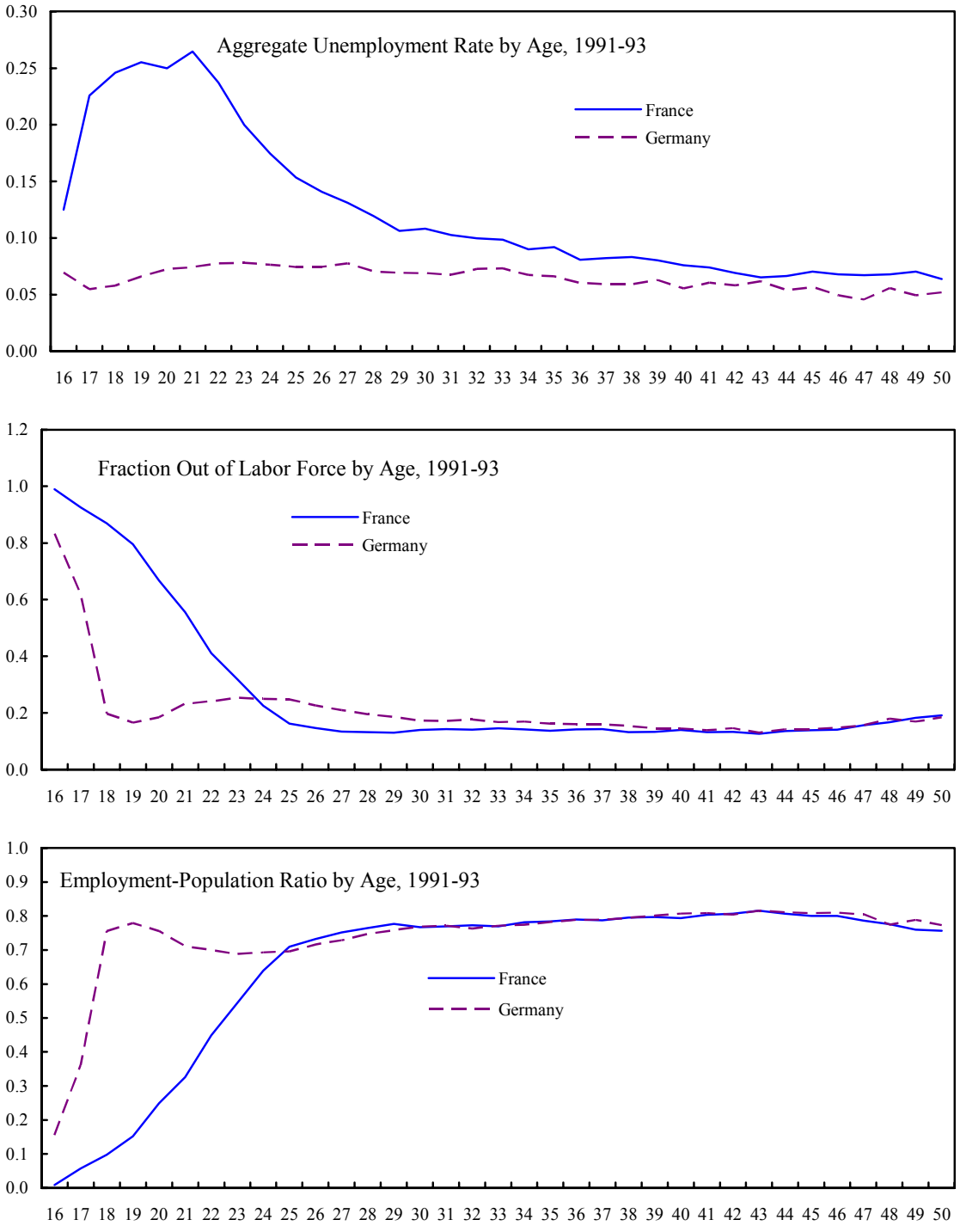
[60] This pattern of labor force participation could imply the existence of a selection problem: the group of French workers participating in the labor force prior to age 26 could be less educated than their German counterparts if more able workers stayed in school longer to avoid unemployment. While this could explain part of the differences in unemployment rates, selection cannot explain persistent differences in real wages (if more educated people in France enter the labor market later than in Germany, we should observe a decline in unemployment and an increase in wages after their entry; we observe the former, but not the latter).

[61] Education levels are defined in the Appendix.

[62] For example, part of the difference in wage growth might reflect the divergence in the fraction of workers with vocational training up to age 22.

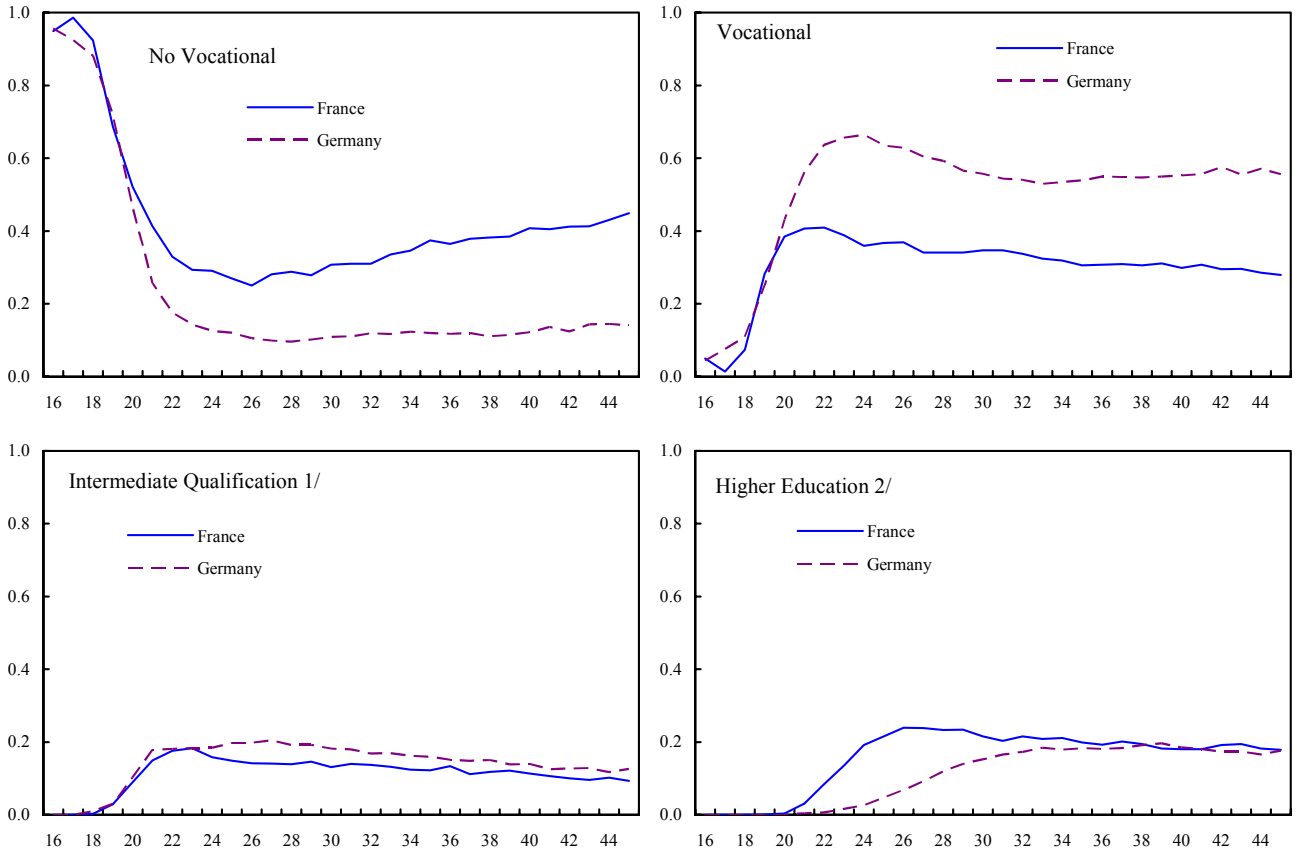
[63] Figure 4 shows the average log hourly real wage in 1995 prices by age in France and Germany. The French wage series has been converted to German DM by applying 1995 nominal exchange rates. The average is taken over all individuals reporting at least 30 usual hours worked per week and earning at least DM 3 per hour. In the *Mikrozensus*, workers report net monthly income in brackets, and we take the average of the midpoint of the brackets divided by usual weekly hours rescaled to a monthly figure. For the *Enquête Emploi*, we can use a continuous measure of net monthly earnings. The difference-in-earnings concepts does not affect our results, since very few young workers have additional sources of income.

Figure 2. France: Labor Market Characteristics



Source: IMF staff calculations.

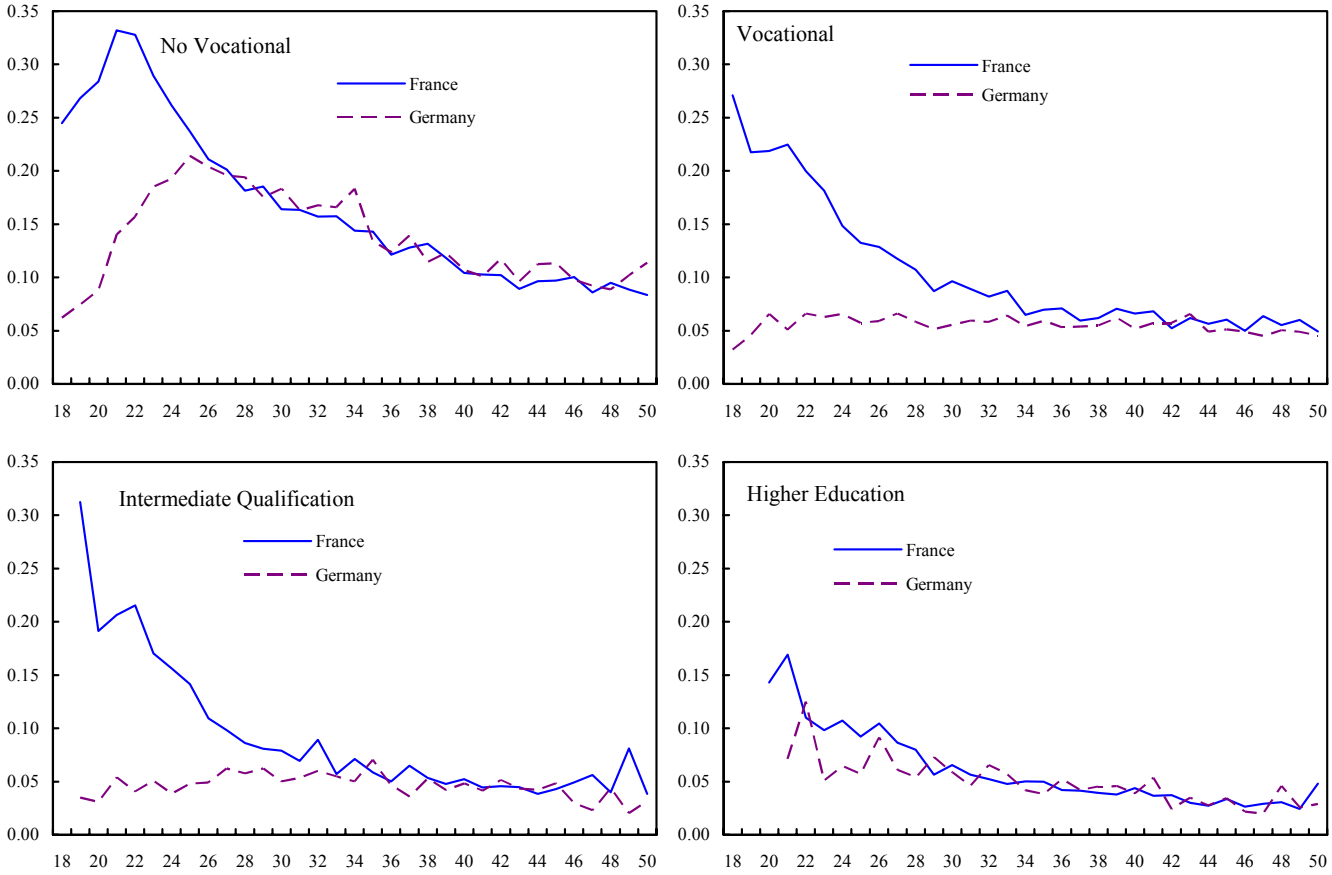
Figure 3. France: Labor Force by Education and Age



Source: IMF staff calculations.

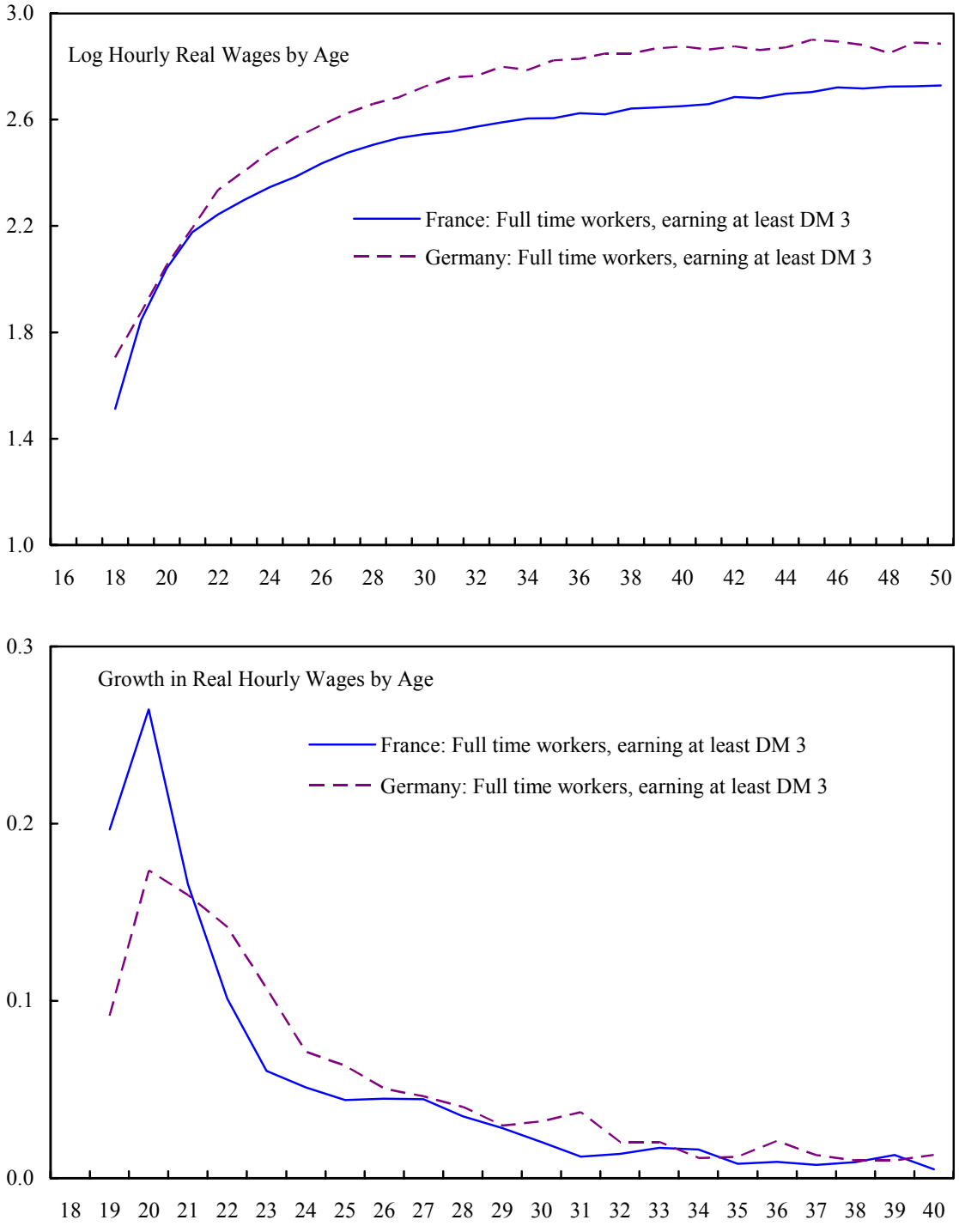
1/ See definition in Appendix 1.
2/ See definition in Appendix 1.

Figure 4. France: Unemployment Rates by Education Group and Age



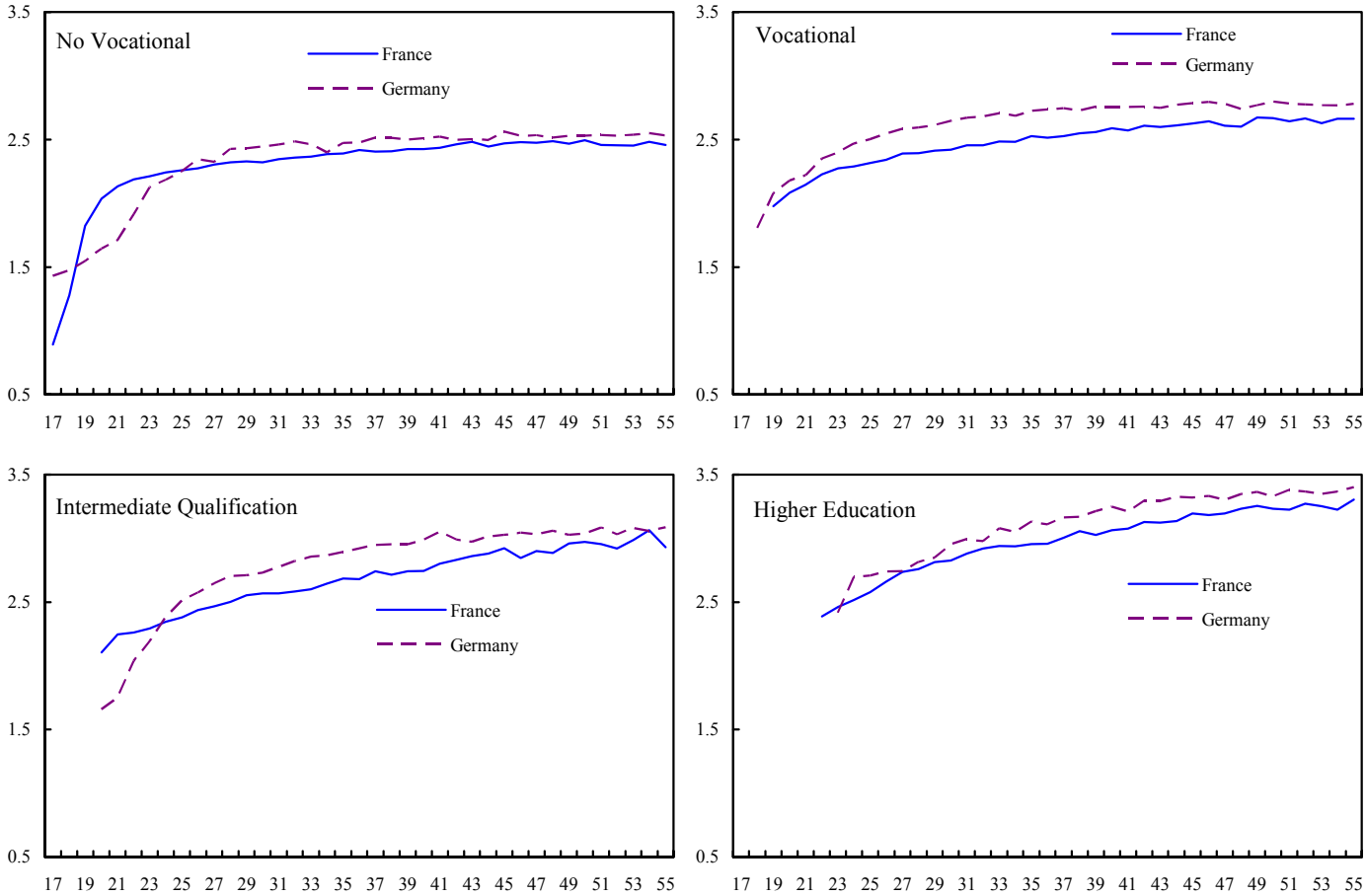
Source: IMF staff calculations.

Figure 5. France: Real Wage Developments



Source: IMF staff calculations.

Figure 6. France: Log Real Hourly Wage-Age Profiles By Education



Source: IMF staff calculations.

C. Sources of Wage Growth and Decomposition of Wages

Theories of wage growth and the role of experience

83. While the descriptive evidence presented in the previous section is suggestive, unemployment and job mobility do not necessarily cause lower wage growth by reducing on-the-job human capital investment. In fact, basic models of wage growth do not give unambiguous predictions regarding the role of training and job mobility.

84. In the basic human capital model by Mincer (1974) and Becker (1964), workers pay for general training they receive on the job by accepting wages lower than their marginal product. Since investments are most profitable early in a worker's career, the model predicts an increasing and concave wage-experience profile. Those who invest in experience accumulation on the job receive initially a lower wage and then eventually overtake those who do not invest. In the basic human capital model, job mobility neither hurts nor benefits workers. However, the amount of on-the-job human capital investment is proportional to the time spent working, and thus persistent or repeated unemployment could affect wage growth.

85. On the other hand, theories of job matching and job search predict that mobility has a positive effect on wage growth. As workers sequentially search among jobs of different quality and move if they find a better offer than the current, their wages grow at a decreasing rate as they exhaust the set of possible improvements (Burdett, 1978). Search models thus predict concave wage experience profiles, a declining rate of job mobility, and declining gains from job changes.

86. Another line of research studies the impact of minimum wages on training. Predictions are not unequivocal in this case as well. Minimum wages can reduce or increase training. In the standard human capital model, they reduce training if they constrain the ability of the worker to accept lower earnings in exchange for training. For example, in Germany, young workers within the apprenticeship receive wages well below the market wage, implicitly paying for part of the training. However, it also appears that firms in Germany bear part of the cost of training (Bardeleben, Beicht, and Feher 1995).

87. Acemoglu and Pischke (1999), on the other hand, develop a model in which asymmetric information leads to training investments by firms in the presence of minimum wages. If the market has less information about workers ability than the current employer, adverse selection compresses wages in the outside job market. If able workers benefit more from training, then paying for training maximizes firms' profits. Generally, any form of wage compression could potentially give rise to firm-sponsored training. The firm will train workers until their market wage is exactly equal to the minimum. Since the market is willing to pay only a wage lower than the marginal product for workers of high ability, the firm is

able to raise profits by training these workers.[64] Interestingly, Acemoglu and Pischke's model of asymmetric information yields two equilibria—one with high turnover, low training, and low adverse selection, and the other with low turnover, high training, and high adverse selection. It could be that France is in the high turnover, low training equilibrium, whereas Germany is in the high training equilibrium. This has obvious implications for differences in turnover rates and training across countries.

88. What are the implications of these theories for our analysis? If the pure Mincer/Becker model were a good representation of reality, one should observe lower wage-experience profiles in France than in Germany, since young workers spend more time without work and are unable to accumulate human capital. On the other hand, if search models drive the behavior of workers in France, one should observe higher mobility and higher wage growth at job switches in France.

On-the-job versus between-jobs wage growth

89. This section provides an accounting framework for the decomposition of wage growth between on-the-job and between-jobs growth. The components identified in this framework can be used to describe the role of job mobility in explaining differences in wage growth in France and Germany; and they can be related to the main theories of experience accumulation as summarized in the previous section. If the high unemployment rates in France were partly due to short spells of search unemployment, the differences in unemployment rates might be a sign of alternative sources of wage growth. An attempt to reduce unemployment would thus harm young French workers.

90. The difference between average log wages at two ages for workers employed at both ages can be written as:

$$\overline{w}(a+1) - \overline{w}(a) \equiv \left[1 - p_m(a)\right] g^s(a) + p_m(a) g^m(a) \qquad (1)$$

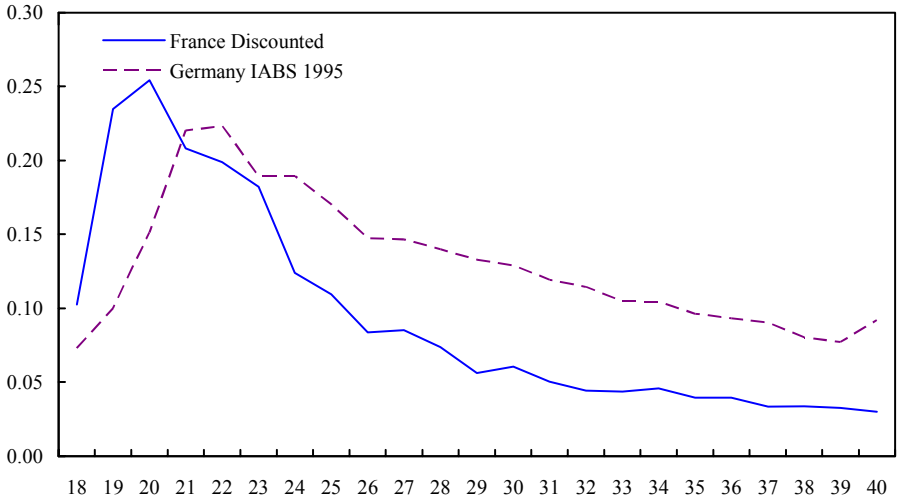
where $p_m(a)$ is the fraction of workers changing jobs between age *a* and *a+1*, $g^s(a)$ is the average wage growth of workers staying at the same job between age *a* and *a+1*, $g^m(a)$ is the average wage growth of workers moving jobs between age *a* and *a+1*.

[64] Note that firms will only pay for training if it raises workers' productivity more for more able workers. If all workers would benefit equally from training, this would be incorporated fully in the market wage even under adverse selection. If low ability workers gain less from training, the market will undervalue the effect of training for high ability workers, since due to adverse selection, the sample of workers looking for jobs is over-proportionately composed of less able workers. Of course, it is crucial that only the training firm, not the market, can observe workers' abilities.

Job mobility

91. The pattern of job mobility is similar in the two countries (Figure 7), but French workers are more mobile initially. The remaining differences may be due to the timing of secondary schooling as well as the duration of fixed-term contracts.[65] While some of the unemployment rate in France at the very beginning of young people's career may be due to search unemployment, the bulk is likely to be due to institutional features of the educational system and the youth labor market.

Figure 7. Annual Job Mobility Rate



Source: IMF staff calculations.

Total wage growth

92. Overall, the biggest wage growth in the two countries occurs at ages 18 to 22 when fixed-term contracts end (Table 2). Then, from age 23 to 26, Germany has higher growth (as a result of higher on-the-job and between-job growth), and from age 27 on, both countries display similar wage growth.

93. Age groups mask important differences (Table 3). France's growth is much bigger at age 18, while in Germany it is greater from age 21 to 24. This is in line with the staggered pattern of exit from fixed-term and entry into permanent employment. The persistence seems large enough to lead to permanent differences in the wage level. It appears possible that at least part of the differences in levels are driven by differences in human capital (due to

[65] Preliminary tabulations suggest that fixed-term contracts cover about 75 percent of workers among French at age 18 or earlier, the rate falling steeply between age 18 and 20. In Germany, the initial rate is 85 percent and also falls rapidly but with a two year lag with respect to the French.

experience accumulation). This difference adds to other important factors in explaining cross-country wage differences such as physical capital or technologies.

Table 2. France: Sources of Wage Growth by Age-Group

Panel A: France					
Age Group	**Total Growth**	**Fraction of Job Changes**	**Growth of Stayers**	**Growth of Movers**	**Fraction of Between-Jobs**
18-22	0.21	0.25	0.19	0.25	0.30
23-26	0.06	0.14	0.05	0.14	0.34
27-30	0.04	0.09	0.03	0.09	0.22
31-35	0.02	0.06	0.02	0.08	0.19
36-40	0.03	0.04	0.02	0.06	0.09
41-45	0.02	0.03	0.02	0.03	0.05
46-50	0.01	0.03	0.01	0.04	0.10
Panel B: Germany					
Age Group	**Total Growth**	**Fraction of Job Changes**	**Growth of Stayers**	**Growth of Movers**	**Fraction of Between-Jobs**
18-22	0.22	0.15	0.18	0.44	0.31
23-26	0.09	0.16	0.07	0.20	0.36
27-30	0.04	0.13	0.03	0.09	0.36
31-35	0.02	0.10	0.02	0.08	0.35
36-40	0.01	0.07	0.01	0.03	0.29
41-45	0.01	0.07	0.01	0.02	0.21
46-50	0.00	0.05	0.00	0.01	0.10

Notes: Growth rates of real hourly earnings for full-time workers employed in two adjacent years earning more than DM 3 in 1995 prices.

Source: IMF staff calculations.

On-the-job wage growth

94. The overall fraction of wage growth explained by on-the-job growth is about two thirds. At the age-group level, the pattern for stayers is very similar across countries but again masks important dynamics at single ages. By single ages, the same pattern holds as for aggregate growth, suggesting differences in gradual entry plus a more persistent differential.

Between-jobs wage growth

95. On average, the fraction of wage growth occurring between jobs is very similar for France and Germany for younger workers, with again a slightly different age pattern consistent with differences in the institutional features of the school-to-work transition (the last column of Table 2 and the first columns of Table 3B show the fraction of growth due to job movers $p_m(a)g^m(a)/g(a)$). Interestingly, starting at age 27, the fraction of growth due to between-jobs wage growth falls substantially for France, while remaining much higher in Germany until age 45. This is not what one would have expected if job search were a more important source of wage growth in France.

Table 3. France: Decomposition of Differences in Annual Wage Growth: France vs. Germany

Panel A: Differences in Growth and Mobility Rates

	Total Growth		Fraction of Job Movers		Growth of Stayers		Growth of Movers	
Age	**France**	**Germany**	**France**	**Germany**	**France**	**Germany**	**France**	**Germany**
19	0.49	0.13	0.29	0.08	0.50	0.12	0.46	0.29
20	0.22	0.23	0.33	0.13	0.18	0.20	0.30	0.50
21	0.11	0.29	0.26	0.20	0.10	0.24	0.15	0.51
22	0.11	0.23	0.23	0.20	0.09	0.18	0.17	0.41
23	0.08	0.16	0.23	0.18	0.05	0.13	0.16	0.30
24	0.07	0.11	0.16	0.18	0.06	0.09	0.11	0.23
25	0.06	0.07	0.14	0.16	0.05	0.05	0.15	0.18
26	0.05	0.05	0.10	0.14	0.03	0.04	0.16	0.12
27	0.04	0.04	0.12	0.14	0.03	0.03	0.14	0.10
28	0.03	0.04	0.09	0.13	0.03	0.03	0.05	0.09
29	0.03	0.03	0.07	0.13	0.03	0.03	0.07	0.08
30	0.03	0.03	0.08	0.12	0.03	0.02	0.07	0.10

Panel B: Cumulative Growth and its Sources

	Between-Jobs Growth as Fraction of Total		Cumulated Total Growth		Cumulated Between-Jobs Growth		Fraction of Between-Jobs Growth Among Cumulated	
Age	**France**	**Germany**	**France**	**Germany**	**France**	**Germany**	**France**	**Germany**
19	0.28	0.16	0.49	0.13	0.13	0.02	0.28	0.16
20	0.45	0.28	0.71	0.37	0.23	0.09	0.33	0.24
21	0.35	0.36	0.82	0.66	0.27	0.19	0.33	0.29
22	0.35	0.37	0.93	0.89	0.31	0.28	0.33	0.31
23	0.46	0.34	1.01	1.05	0.35	0.33	0.34	0.32
24	0.24	0.37	1.08	1.16	0.36	0.37	0.34	0.32
25	0.32	0.39	1.14	1.23	0.38	0.40	0.34	0.32
26	0.35	0.33	1.19	1.28	0.40	0.42	0.34	0.32
27	0.39	0.39	1.23	1.32	0.42	0.43	0.34	0.33
28	0.14	0.33	1.26	1.36	0.42	0.44	0.33	0.33
29	0.14	0.33	1.30	1.39	0.42	0.45	0.33	0.33
30	0.17	0.37	1.33	1.42	0.43	0.47	0.32	0.33

Panel C: Sources of Differences in Growth Rates

		Difference due to			Fraction due to			
Age	**Difference in Growth**	**Stayers**	**Movers**	**Mobility**	**Stayers**	**Movers**	**Mobility**	**Sum**
19	0.36	0.27	0.05	0.04	0.76	0.14	0.10	1.00
20	-0.01	-0.01	-0.07	0.06	0.62	4.61	-4.23	1.00
21	-0.18	-0.10	-0.09	0.01	0.57	0.51	-0.08	1.00
22	-0.12	-0.07	-0.06	0.01	0.57	0.47	-0.05	1.00
23	-0.08	-0.06	-0.03	0.01	0.69	0.41	-0.11	1.00
24	-0.04	-0.02	-0.02	0.00	0.46	0.47	0.07	1.00
25	-0.01	0.00	0.00	0.00	0.24	0.38	0.39	1.00
26	0.00	-0.01	0.00	0.00	1.12	-0.73	0.61	1.00
27	0.01	0.00	0.00	0.00	0.51	0.82	-0.33	1.00
28	0.00	0.00	0.00	0.00	-0.84	0.98	0.85	1.00
29	0.00	0.00	0.00	0.00	-9.56	3.08	7.47	1.00
30	0.00	0.00	0.00	0.00	-4.77	2.48	3.29	1.00

Notes: Growth rates of real hourly earnings for full-time workers employed in two adjacent years earning more than DM 3 in 1995 prices.

Source: IMF staff calculations.

96. From the analysis, it does not appear that French workers gain overall more by changing jobs in the age range from 20 to 25.[66] It is unlikely that the difference is due to varying degrees of selection into mobility, since job mobility is of a similar order of magnitude. Since the decomposition of wage growth in "on-the job" and "between-jobs" growth does not provide conclusive evidence on the importance of search in determining wage growth, the next section suggests a different approach to evaluate the importance of labor force attachment and return to experience in determining wage growth.

Return to experience: counterfactual exercise

97. In this section, we perform a simple counterfactual exercise to obtain a sense of whether low wage growth in France is due to low labor force attachment or due to low returns to experience. If the former held, then a policy designed to reduce unemployment may be optimal. In contrast, if low returns to experience were the reason, further investment in training would be more appropriate.

98. If wages increased due to human capital investments, the gain, $g(a)$, should be a function of labor force attachment, *f(a)* (it is in this sense that high mobility and inactivity rates may hurt the accumulation of experience) as well as of the return to experience, *r(a)*, *i.e.,*

$$g(a) = r(a) f(a) \tag{2}$$

Given measures of total wage growth and labor force attachment, and ignoring issues of causality, a measure of the 'true' return to experience is $r(a) = g(a) / f(a)$.[67] This measure

[66] Panel C of Table 3 shows a simple shift-share decomposition of the differences in growth rates between France and Germany. Taking the difference across countries of Equation (1), one obtains a shift-share decomposition of differences in growth rates of the form:

$$\Delta\overline{w}(a)^F - \Delta\overline{w}(a)^G = \Delta g^s(a)\left[1 - p_m^F(a)\right] + \Delta g^m(a) p_m^F(a) + \Delta p_m(a)\left[g^{m,G}(a) - g^{s,G}(a)\right]$$

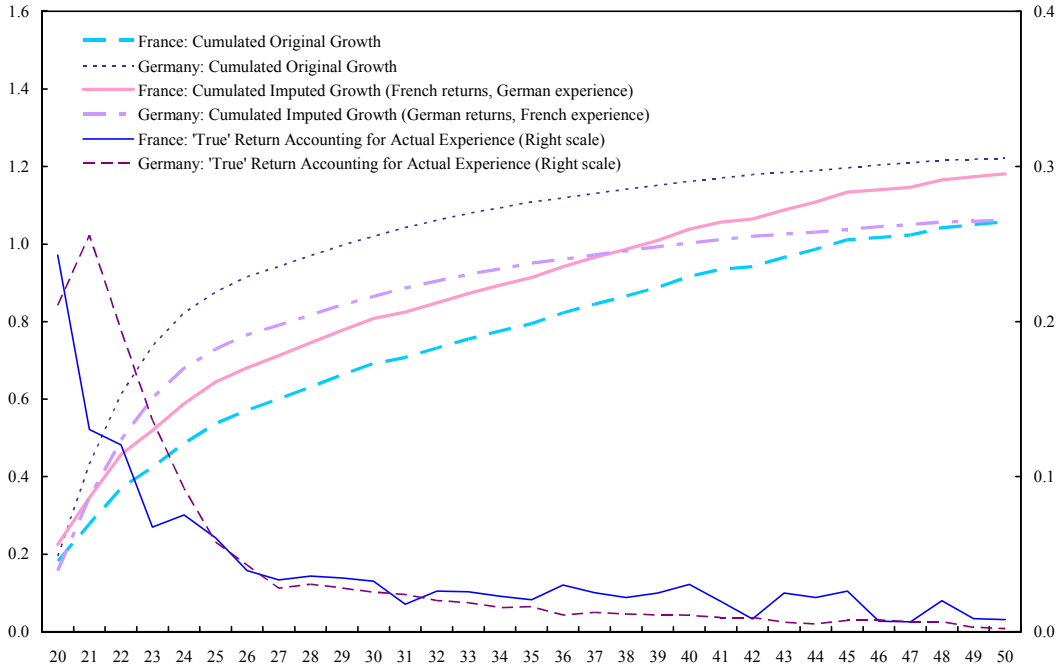
where the first two components capture the weighted differences in growth on-the-job and between-jobs, and the last components captures the effect of differences in mobility rates. The last columns of the tables display the fractions of the difference in total growth explained by either component. From the shift-share decomposition, it appears that differences in the wage growth of stayers explain about 60 percent of aggregate wage differences between French and German young workers in the early 20s. The remaining difference is explained by the wage growth of movers.

[67] This ignores gains due to job mobility. Since this has been shown to be important in previous paragraphs, this measure will thus overstate the returns to experience.

will be used below to obtain a first assessment of whether differences in wage growth can be explained by differences in experience.[68]

99. The counterfactual exercise consists of two steps: first, in obtaining a measure of the 'true' returns to experience by correcting wage growth for the expected amount of time spent working; second, in applying the French profile of work experience to the German returns and the German experience profile to the French returns. We find that, even if French experience were to be at the German level, wage growth in France would be lower. Similarly, the wage profile would be higher in Germany than in France even if Germans spent the same amount of time in unemployment. In other words, returns to experience appear to be lower in France even adjusting upwards by a measure of actual labor market experience (Figure 8).

Figure 8. Simulated On-the-Job-Wage Profiles Accounting for Actual Participation



Source: IMF staff calculations.

[68] Without longitudinal information on workers' job histories, this calculation can only be implemented at the group level by imputing experience for each group *g* at age *a* using a measure of aggregate labor force attachment. A natural measure of labor force attachment would be the employment rate for a given group *g* at age *a*. If actual labor force participation of a worker is measured as the number of days in a given year, then the average of this measure at the group level is the sum of the group's employment rates at each day within a year. If one is willing to approximate the daily employment rate with the annual average, then the average level of a group's actual experience can be approximated by 365 times the group's employment rate at a given age.

100. Ignoring the question regarding causality and taking these returns as the "true" returns to experience, one obtains that the predominant share of differences in on-the-job wage growth is due to differences in returns (80 percent) rather than differences in on-the-job human capital accumulation. Thus, it appears that increasing labor force attachment in France per se would do little to increase wage growth. However, the counterfactual experiment run here are at best indicative, since it is not known whether actual experience really has a causal effect on wage growth.

D. Conclusion

101. Persistently high unemployment rates may have negative effects on workers' wage growth due to losses in labor market experience, but high unemployment may also be a sign of beneficial job search offsetting these losses. Higher youth unemployment in France does not appear to be the result of higher mobility among jobs induced by search (job changes are as beneficial to wage growth in Germany as in France, suggesting that job search is equally important in both countries). Neither is it evident that the differences in wage growth can be easily rationalized by differences in the degree of labor force attachment. Instead, it seems plausible that lower returns to experience play an important role for lower wage growth in France. Consequently, work experience and stable labor market attachment are only a partial substitute for human capital investment via more formal training, and it is conceivable that some workers in France are undertrained relative to Germany. A comparison of hourly wage profiles suggests that this might be in particular the case for those with vocational and intermediate training. Increased training, with its cost shared between employer and employees, would appear to be a valid avenue to improve the employment experience of low-skilled young workers in France.

Educational Attainment, Highest Degree Obtained

1	**No vocational qualification**
10	No degree *G:* No degree *F:* No degree
11	Lower secondary education *G: Hauptschule* *F: Certificat d'études primaires* (CEP)*/Diplôme de fin d'études obligatorires* (DFEO)
12	Intermediate secondary education *G: Realschule* *F: Brevet d'études du premier cycle (BEPC)*
2	**Basic vocational qualification**
20	No or lower secondary education+ basic vocational degree *G:* no degree/ *Hauptschule + Lehre/Berufsfachschule* *F:* no degree/CEP/DFEO+*Certificat d'Aptitude Prof.* (CAP)/*Brevet d'Etudes Prof.* (BEP)
21	Intermediate secondary education + basic vocational degree *G: Realschule+Lehre/Berufsfachschule* *F:* BEPC+CAP/BEP
3	**Intermediate qualification**
30	Intermediate vocational degree *G: Fachschule/Gesundheitsschule/Beamtenschule* F: *Baccalauréat Professionnel/Brevet d'Enseignement Agricole* (BEA), *Commercial* (BEC), *Industriel*
31	Vocational maturity certificate *G: Fachhochschulreife* *F: Bac Techno/ Bac Pro/Brevet de Technicien*
32	General maturity certificate *G: Hochschulreife(Abitur)* *F: Bac Général*
33	General maturity certificate + vocational degree *G: Hochschulreife* +vocational qual. *(Lehre/Fachschule)* *F: Bac Général* + vocational qual. (CAP/BEP/BP/*Bac pro*)
4	**Tertiary level qualification**
40	Lower tertiary education *G: Fachhochschule/Ingenierschule* *F: Bac* +2: *Diplôme d'Et. Univ. Gen.* (DEUG), *Brevet de Tech. Sup.* (BTS), *Dipl. Univ. de Tech.* (DUT)
41	Upper tertiary education *G:* Universität, *Technische Universität* *F: Bac* +3/4 and beyond (*Licence, Maitrise, Bac* +5, *Grande Ecole*)

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