cover inflation. Playing for safety, however, Riesenhuber plans also to encourage industry to finance more research. He considers that large projects can be better initiated and carried out by industry than by the cameral system of federal government. It remains to be seen how well he succeeds — and what the consequences would be for the government's own research establishments. **Sarah Tooze**

Why the lag?

Why has research in West Germany been a disappointment? Economically, West Germany has been if anything better off than its competitors. But West Germany has problems peculiar to itself, as follows:

- Length of education. Both school and university education take longer in West Germany than elsewhere, so that the average age for beginning a PhD is 27. The results are expense and loss of some of the most creative years.

- The PhD is finished at an age when tenured jobs and stability are more attractive than mobility, so grants for travel are undersubscribed.

- Too few untenured posts. Under German employment laws there must be a reason for ending a job. Despite loopholes and contrivances, mobility within the research community is limited.

- Legal responsibility of the *Ordinarius* (C₄) professors. By law, responsibility for finance and administration is usually vested only in the C₄ professor. This creates a sharply pyramidal hierarchy which deprives other members of staff of responsibility.

- Research budgets of universities are contributed three quarters by the region (*Land*). This money goes automatically to the C₄ professors, who have complete control and who are not subject to review of any kind. Federal money allotted by a normal grant system covers one quarter of university research spending and is the only money allocated subject to review.

- The 1976 university law laid down that all grant money, even when allocated to a specific person for a specific purpose, must be administered by the university. This has spawned a bureaucratic machine which leaves the grant-user trapped in a mesh of regulations and subject to interference. These procedures discourage industry from financing research in the universities.

- Inefficient administration. There is a lack of professionalism in the university administrations and administrators are rarely appointed within university departments to help research staffs and coordinate with the university.

- The numbers of students have soared, but despite overall increased spending, research money per head has fallen.

Sarah Tooze

Polish universities

More signs of latent discontent

"Universities must not turn into an arena for political games", the Polish government newspaper *Rzeczpospolita* warned as the new term opened on 1 October. Government and party officials were evidently worried that the reassembly of some 400,000 young people in the country's 87 universities and higher colleges could provide a focus for further confrontations — particularly in the atmosphere of heightened tension following the enactment of the new law on trade unions which dissolves all existing union structures (including the 11-million strong Solidarity). In the event, the students, whose own Independent Students' Association (NZS) was outlawed last January, reassembled peacefully, and the problem now facing the universities is not so much the threat of student political action but rather of inaction.

Calling for a "climate of normality" in the universities, the party daily *Trybuna Ludu* stated last week that "it will be difficult for the academic milieu to fulfil its task if it does not embark on a dialogue on such issues as the new law on higher education, improvement in upbringing and teaching methods, and the future of the student movement".

The President of the Council of State, Henryk Jablonski, reiterated this theme when conferring professorial diplomas in Warsaw on 6 October. Normal functioning of society will be impossible, he stressed, if citizens are "inactive", and students should therefore be trained to show "initiative, independent thinking and imagination". A conference of university lecturers from Lower Silesia and Opole went so far as to urge encouraging a "creative" approach by students to political and social studies (courses once more obligatory for all).

The students, however, seem reluctant to embark on dialogue with an academic establishment they no longer trust. Some 30 university rectors, elected under the previous democratic procedures have been replaced under martial law, and, under the political "verification" procedures, some 2 per cent of university staff have failed to meet the required criteria, while more than 5 per cent have been re-employed only conditionally, and 2½ per cent have had to take up non-teaching jobs within the universities.

"Internal emigration" — passive non-cooperation with the political and social life of the country — became widespread among Polish intellectual and creative circles under martial law, and has been widely advocated in underground Solidarity literature. In what appears to be a last-ditch stand to "channel" the aspirations of the students, the authorities are now trying to establish a new students' organization, to replace both the banned

NZS and the party-linked Socialist Union of Polish Students (SZSP), a move that many SZSP activists themselves urge as a way to bring the mass of students back into the party fold.

Trade union law, which effectively put an end to hopes for a return to the liberalizations of 1980–81 has already moved some Polish students to consider turning their internal emigration into an external one, and to try to continue their studies abroad. Some Western embassies in Warsaw, the British Embassy in particular, have already foreseen this possibility and are granting visas to students only if financial support is assured by a Western sponsor (see p.574). Such sponsors will not prove easy to find. In the United Kingdom, where a Polish Students' Appeal Fund was set up to help students stranded by the declaration of martial law, universities have been generous with free places, but funds for maintenance and such necessities as textbooks are, in the words of Dr Stanislaw Gomulka of the London School of Economics, "already over-extended".

Vera Rich

Canada's research plans

Holding up

Washington

Canada's ambitious five-year plan for a rapid growth of investment in research and development is in trouble — but it is surviving present economic difficulties more successfully than almost any other government initiative.

This mixed picture emerges from a report just issued by the Canadian National Research Council (NRC), the government's national laboratory. NRC's budget for the 1981–82 fiscal year fell short of the \$304 million it said it needed to carry out even the most restrictive of three alter-

OECD data on research and development expenditure

Country	Year	Expenditure as % of GDP
United States	1980	2.49
Switzerland	1979	2.45
Germany	1979	2.27
United Kingdom	1979	2.20
Japan	1980	2.04
Netherlands	1978	1.97
Sweden	1977	1.90
France	1979	1.79
Belgium	1979	1.40
Norway	1979	1.37
Yugoslavia	1977	1.20
Canada	1981	1.18*
Finland	1979	1.08
Denmark	1979	0.97
Italy	1979	0.82
Turkey	1978	0.59
Portugal	1978	0.32
Greece	1980	0.18

*The OECD figures include social sciences and humanities research. The figures cited in the text (1.07 per cent current and 1.5 per cent goal) do not.